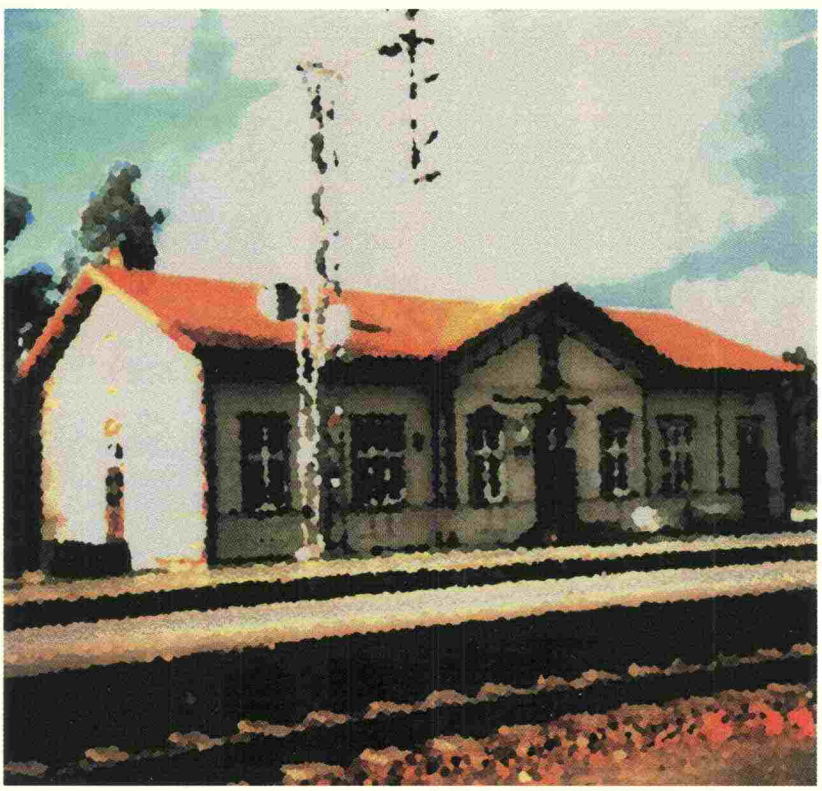
THE FINNISH RAILWAY STATISTICS 1999



FINNISH
RAIL
ADMINISTRATION

THE FINNISH RAILWAY STATISTICS 1999

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FOREWORD

The present publication is an English version of the Finnish Railway Statistics 1999. It contains statistical data on railway network and railway traffic in Finland.

This edition has been prepared by Harri Lahelma, Finnish Rail Administration and Vesa Juuti, VR-Group Ltd.

In Finland, the Finnish State Railways was transformed into a joint stock company in 1995. At the same time, the Finnish Rail Administration (RHK) was established to operate under the Ministry of Transport and Communications. RHK is in charge of maintaining and developing the rail network and also carries the responsibility for rail traffic safety. The activities of the former Finnish State Railways are continued by the VR-Group Ltd and its subsidiaries, of which VR Ltd (VR) runs the railway transportation.

Helsinki, August 1999

Ossi Niemimuukko
Chief Director
Finnish Rail Administration

CONCEPTIONS

Length of line	=	total length of main and secondary lines excluding sidings
Track length	=	total length of main and secondary tracks including sidings
Length of line operated	=	total length of own line and that of another line operated by the VR
Train-kilometre	=	distance of one kilometre covered by the train
Gross ton-kilometres	=	total gross weight of the locomotive and the carrying stock of a train in tons X corresponding train-kilometres
Gross ton-kilometres hauled	=	gross weight of the carrying stock of a train in tons X corresponding train-kilometres
Vehicle-axle-kilometres	=	number of axles of the vehicles of a train X corresponding train-kilometres
Locomotive-kilometre	=	distance of one kilometre covered by the locomotive
Passenger-kilometre	=	distance of one kilometre covered by the passenger
Ton-kilometre	=	one conveyance kilometre of one ton of goods

The following symbols have been used in the tables:

"	=	repetition
–	=	nothing to indicate
0 or 0.0	=	the quantity is smaller than half of the unit used
..	=	information not available
.	=	category not applicable

A horizontal line drawn across a time series shows substantial breaks in the homogenity of a series.

Page

THE YEAR 1998 IN BRIEF

Line [1] and transport stock

		1998	1997	Change, %
Length of line	km	5 867	5 865	0.0
of which electrified	km	2 197	2 061	6.6
Track length	km	8 725	8 730	-0.1
Tractive stock strength [2]	number	761	775	-1.8
Hauled stock in commercial traffic [2]				
Passenger stock	number	1 002	995	0.7
Freight stock	number	11 914	12 495	-4.7
Railway operating points [2]	number	439	435	0.9
Buildings				
Finnish Rail Administration	number	4 106	4 115	
VR	number	411	412	
Finnish Rail Administration	1 000 rm^3 [4]	1 859	1 859	
VR	1 000 rm^3 [4]	3 920	3 918	

Train traffic [2]

		1998	1997 [3]
Train-km	1 000	44 481	44 137
Passenger traffic		27 105	27 105
Freight traffic		17 376	17 032
Gross ton-km	1 000 000	32 669	32 617
Locomotive-km	1 000	63 966	63 342
Energy consumption in train traffic			
Electricity	million kWh	470	450
Diesel oil	million l	64.3	65.8

Passenger traffic [2]

		1998	1997	Change %
Journeys	1 000	51 370	49 980	2.8
Passenger-km	million	3 377	3 376	0.0

[1] Lines owned by the Finnish Rail Administration.
[2] Data relating to VR.
[3] Change in statistics.
[4] Building cubic-metres.

Freight traffic [2)]

		1998	1997	Change %
Freight volumes	1 000 tons	40 740	40 321	1.0
Domestic		23 613	23 603	0.0
International		17 127	16 718	2.5
Ton-km	million	9 885	9 856	0.3
Domestic		6 313	6 257	0.9
International		3 572	3 599	-0.8

Rail traffic volume indice [2)] (1985 = 100)

	1998	1997
Passenger traffic	116	115
Freight traffic	138	137
Total rail traffic	130	127

Railway accidents [2)]

	1998	1997
Number of railway accidents	8	8
Passengers		
Killed	10	1
Seriously injured	9	2

1 LINE AND TRANSPORT STOCK [1) 2)]

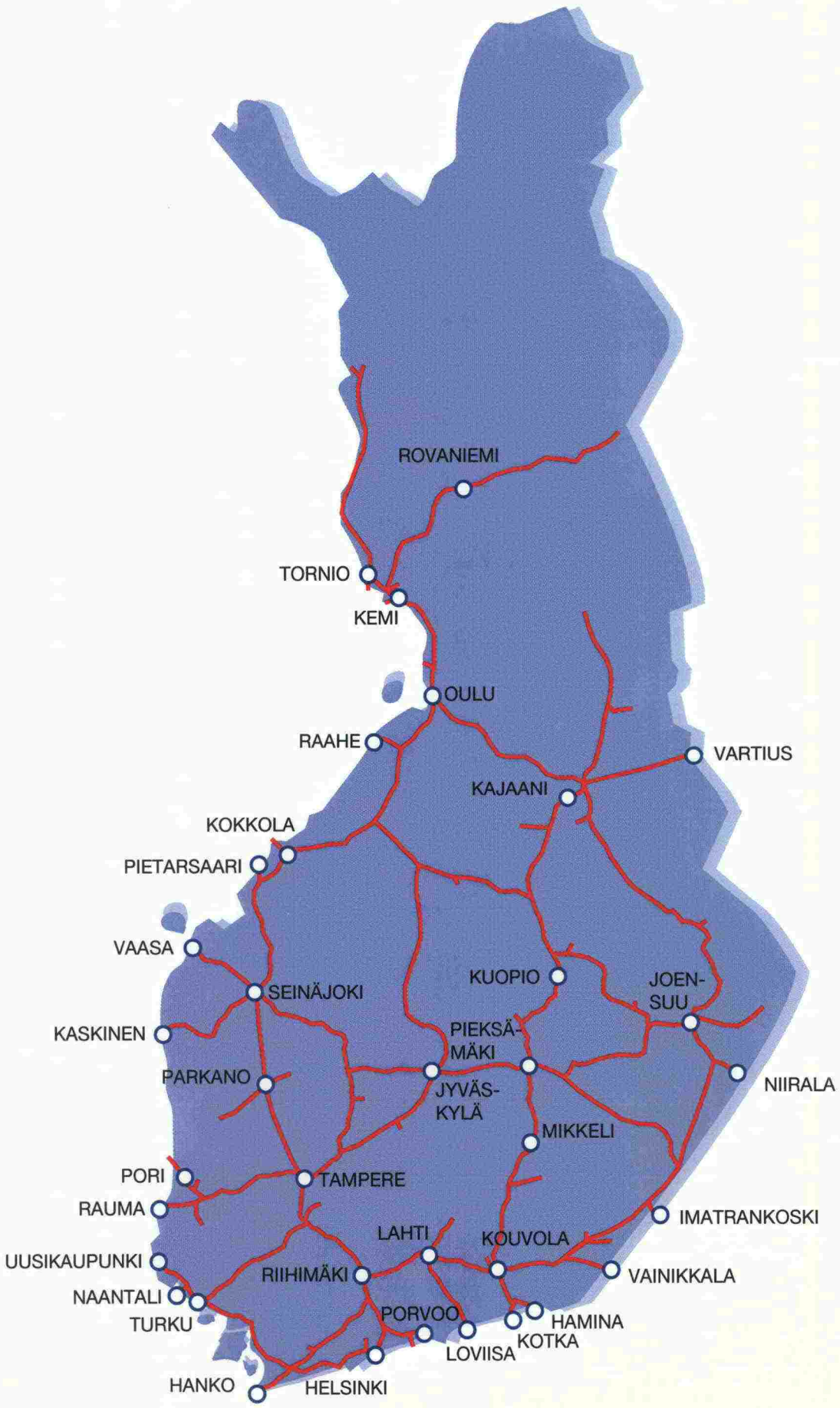
1.1 LINE AND SUPERSTRUCTURE

Rail gauge	1.524 m	
Lenght of line	km	5 867
Single track	km	5 360
	%	91.4
of which electrified	km	1 690
Double track or more	km	507
	%	8.6
of which electrified	km	507
Classification of main lines [3)]		
Line category A	Track-km	751
Line category B	Track-km	1 244
Line category C	Track-km	4 425
Rails		
Track length	Track-km	8 725
Main tracks	Track-km	6 212
	%	71.2
Secondary tracks	Track-km	208
	%	2.4
Sidings	Track-km	2 305
	%	26.4
Switches	Number	6 481
Crossings	Number	53
Tunnels	Number	42
	Metres	25 284

1) At the end of 1998.
2) Lines owned by the Finnish Rail Administration.
3)

Line category	Rails		Ballast
A	K30	kg/m	gravel
B	K43, K60, 54E1, 60E1	"	gravel, macadam
C	54E1, 60E1	"	macadam

1.2 RAIL NETWORK



1.3 SECTIONS OF LINE ACCORDING TO DATE WHEN OPENED FOR TRAFFIC

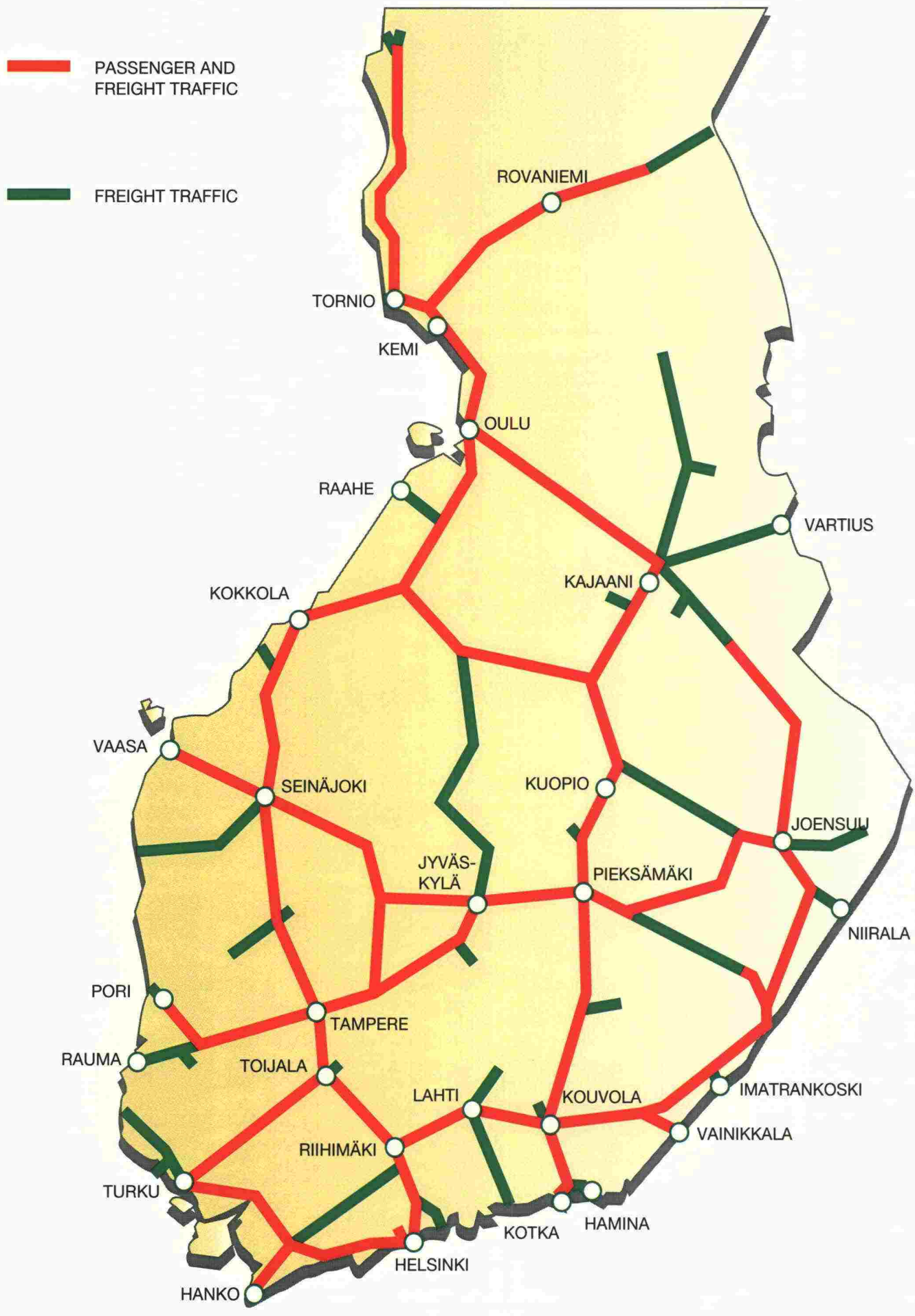
Section of line	Opened for traffic	km
Helsinki – Hämeenlinna	17.3.1862	107
Pasila – Sörnäinen	6.2.1863	3
Riihimäki – Lahti	1.11.1869	59
Lahti – Vesijärvi	1.11.1869	3
Lahti – Vainikkala Border	11.9.1870	155
Hanko – Hyvinkää[1]	8.10.1873	149
Porvoo – Kerava[2]	16.7.1874	33
Turku – Toijala	22.6.1876	128
Tampere – Hämeenlinna	22.6.1876	80
Turku – Turku Harbour	22.6.1876	3
Tampere – Vaasa (Nikolainkaupunki)	29.9.1883	306
Simola – Lappeenranta	1.8.1885	18
Seinäjoki – Oulu	1.11.1886	335
Oulu – Toppila	1.11.1886	4
Kokkola – Ykspihlaja	1.11.1886	5
Pännäinen – Leppäluoto	1.11.1887	14
Kouvola – Kuopio	1.10.1889	273
Suonenjoki – Iisvesi	1.10.1889	6
Kouvola – Kotka	1.10.1890	54
Kouvola – Kymintehdas	1.10.1892	9
Imatrankoski Border – Imatrankoski (Imatra)	1.11.1892	5
Vaasa (Nikolainkaupunki) – Vaskiluoto	1.8.1893	4
Joensuu – Niirala Border	1.11.1894	70
Helsinki – Eteläsatama	16.12.1894	4
Eteläsatama – Katajanokka	1.10.1895	1
Imatrankoski (Imatra) – Vuoksenniska	16.10.1895	7
Tampere – Pori	1.11.1895	134
Kokemäki (Peipohja) – Rauma[3]	15.4.1897	47
Haapamäki – Jyväskylä	1.11.1897	77
Jyväskylä – Suolahti	1.11.1898	40
Inkeroinen – Hamina[4]	5.10.1899	26
Pori – Mäntyluoto	1.11.1899	21
Turku – Karjaa	1.11.1899	113
Tuomioja (Lappi) – Raahe[5]	5.12.1899	28
Raahe – Lapaluoto[5]	1.9.1900	6
Kuopio – Iisalmi	1.7.1902	85
Pasila – Karjaa	1.9.1903	84
Tuira – Tornio	16.10.1903	129
Iisalmi – Kajaani	16.10.1904	83
Savonlinna – Parikkala	1.2.1908	60
Laurila – Rovaniemi	16.10.1909	107
Joensuu – Lieksa	10.9.1910	104
Lieksa – Nurmes	16.10.1911	56
Kiukainen – Kauttua[3]	1.2.1913	13
Seinäjoki – Kristiinankaupunki	1.8.1913	112
Perälä – Kaskinen	1.8.1913	24
Huutokoski – Varkaus	1.11.1914	18
Pieksämäki – Savonlinna	1.11.1914	106
Jyväskylä – Pieksämäki	1.6.1918	79
Tornio – Tornio Border	1.4.1919	2
Tornio – Kukkola	24.3.1922	17
Kukkola – Karunki	1.1.1923	10
Kajaani – Kontiomäki	1.1.1923	26
Turku – Mynämäki	1.9.1923	30
Raisio – Naantali	16.11.1923	6
Iisalmi – Kiuruvesi	1.12.1923	34
Mynämäki – Kalaranta	1.9.1924	36
Kiuruvesi – Pyhäsalmi	1.1.1925	32
Pyhäsalmi – Haapajärvi	1.8.1925	33
Haapajärvi – Ylivieska	1.12.1925	55
Karunki – Korpikylä	1.1.1926	9
Paltamo (Kiehimä) – Vuokatti	16.10.1926	42
Vuokatti – Sotkamo (Hirvenniemi)	16.10.1926	6
Korpikylä – Aavasaksa	1.11.1927	34
Oulu – Muhos	1.11.1927	36
Joensuu – Sysmäjärvi	1.12.1927	44
Vuokatti – Saviaho	23.1.1928	23
Sysmäjärvi – Outokumpu	15.5.1928	3
Aavasaksa – Kaulinranta (Kauliranta)	1.9.1928	7
Muhos – Utajärvi	1.12.1928	22
Lohja – Tytyri	21.12.1928	3
Vilppula – Mänttä	1.1.1929	8
Saviaho – Rumo	1.2.1929	17
Utajärvi – Vaala	16.10.1929	34
Rumo – Nurmes	1.11.1929	44
Vaala – Paltamo (Kiehimä)	1.12.1930	57
Markkula – Kaupinkangas	15.5.1931	10
Lahti Lahtis – Jyränkö	1.1.1932	35
Jyränkö – Heinola	22.5.1932	2
Pori – Niinisalo	16.12.1933	64
Rovaniemi – Kemijärvi	1.9.1934	83
Lappeenranta – Imatra T (Tainionkoski)	1.10.1934	41
Niinisalo – Kairokoski (Parkano)	1.1.1935	37
Imatra T (Tainionkoski) – Kaukopää	16.11.1935	3
Vuoksenniska (Rönkkä) – Simpele	1.11.1937	39
Kairokoski – Virrat	1.11.1937	51
Hillo harbour line	1.12.1937	6
Toijala – Valkeakoski	1.9.1938	18
Virrat – Haapamäki	15.11.1938	40
Kontiomäki – Hyrynsalmi	1.12.1939	46
Varkaus – Vihtari	1.12.1939	65
Vihtari – Viinijärvi	22.4.1940	36
Haukipudas – Martinniemi	1.10.1940	5
Raippo – Melkkola	25.8.1940	2
Kemijärvi – Kelloselkä	1.11.1942	79
Suolahti – Äänekoski	16.11.1942	7
Simpele – Parikkala	1.12.1947	19
Kovjoki – Uusikaarlepyy	10.4.1949	8
Orivesi – Jämsä	15.7.1950	56
Jämsä – Jämsänkoski	1.7.1951	4
Kauppi – Ylihärmä	1.10.1951	3
Jämsä – Kaipola (Perälänlahti)	1.8.1952	7
Hyrynsalmi – Laaja	1.12.1952	18
Murtomäki – Otanmäki	1.11.1953	25
Joutjärvi – Mukkula	1.2.1954	7
Äänekoski – Saarijärvi	1.4.1955	30

1.3 SECTIONS OF LINE ACCORDING TO DATE WHEN OPENED FOR TRAFFIC

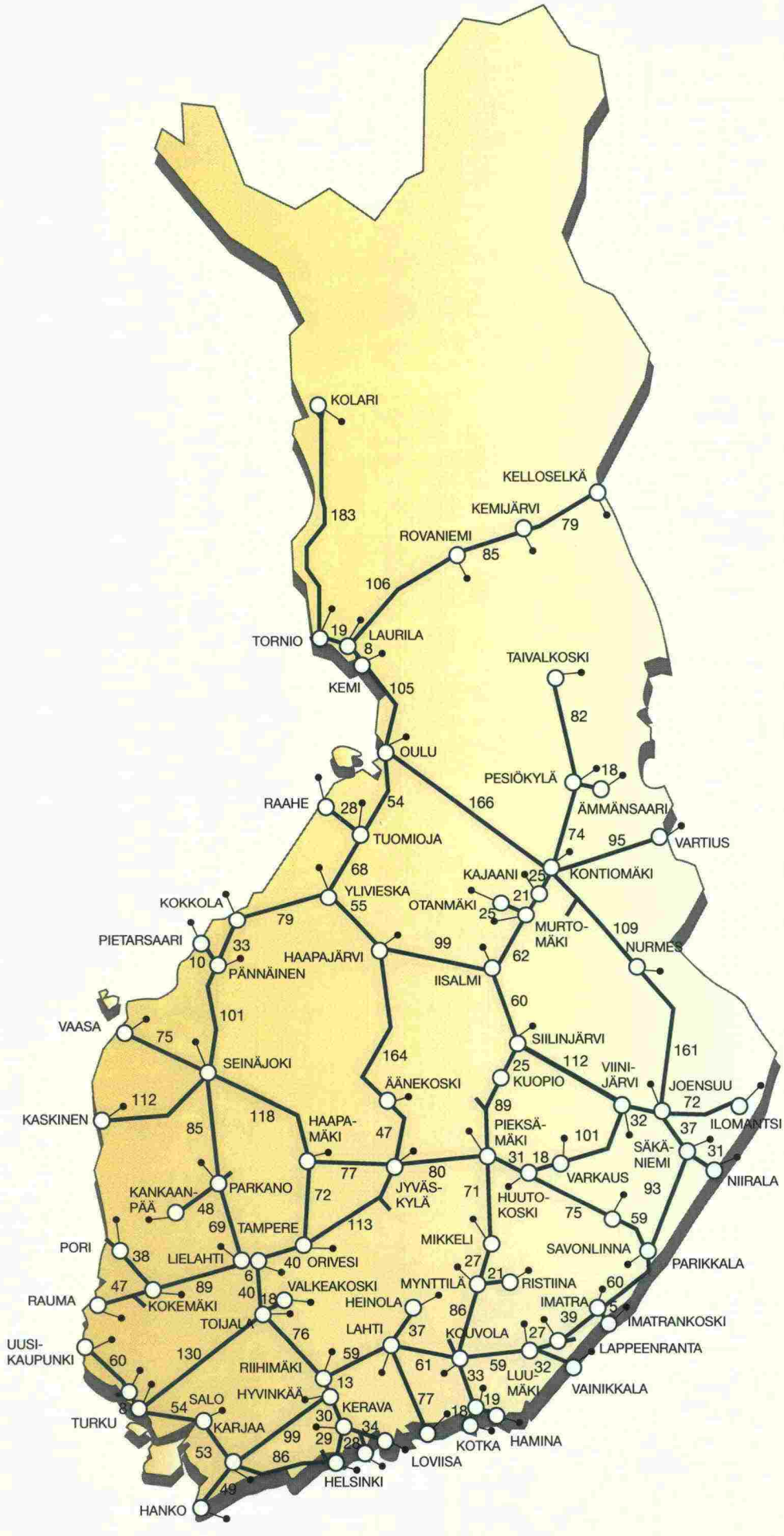
Section of line	Opened for traffic	km
Haapajärvi – Muuras	16.12.1954	23
Laaja – Pesiökylä	16.9.1955	10
Pesiökylä – Ämmänsaari	1.12.1955	18
Muuras – Pihtipudas	1.10.1956	25
Siilinjärvi – Sänkimäki	15.11.1956	15
Pesiökylä – Kovajärvi	15.11.1956	11
Joensuu – Keskijärvi	15.11.1957	31
Kovajärvi – Vääkiö	15.11.1957	10
Sänkimäki – Juankoski	15.11.1957	27
Keskijärvi – Tuupovaara	15.9.1958	13
Saarijärvi – Enonjärvi	1.1.1959	29
Pihtipudas – Seläntaus	15.1.1959	7
Vääkiö – Leino	15.1.1959	20
Leino – Taivalniska	1.11.1959	39
Enonjärvi – Kannonkoski	1.11.1959	8
Kannonkoski – Varanen	1.1.1960	11
Seläntaus – Keitelepohja	15.2.1960	12
Lahti – Loviisa Harbour (Valko) [6]	2.5.1960	77
Varanen – Keitelepohja	1.10.1960	19
Porvoo – Porvoo Centre	28.5.1961	1
Taivalniska – Taivalkoski	1.12.1961	2
Luumäki – Lappeenranta	15.9.1962	27
Tuupovaara – Herajärvi	1.8.1963	9
Kaulinranta (Kauliranta) – Pello	3.1.1964	42
Pello – Sieppijärvi	1.12.1965	43
Säkäniemi – Puhos	1.12.1965	28
Sieppijärvi – Kolari	1.12.1966	21
Puhos – Parikkala	1.12.1966	65
Herajärvi – Ilomantsi	1.8.1967	18
Kolari – Äkäsjoki	1.9.1967	17
Juankoski – Luikonlahti	1.11.1968	25
Seinäjoki – Parkano (Uusi-Parkano)	1.1.1970	84
Luikonlahti – Sysmäjärvi	1.1.1970	31
Parkano – Lielahti	1.1.1971	70
Olli – Sköldvik	14.2.1972	11
Vuonos Branch Line	1.3.1972	3
Niesa – Rautuvaara	1.4.1973	10
Vuokatti – Lahnaslampi	1.2.1974	12
Huopalahti – Martinlaakso	1.6.1975	8
Kontiomäki – Vartius Border	1.11.1976	93
Jämsänkoski – Jyväskylä	1.11.1977	53
Mynttilä – Ristiina	22.11.1979	21
Juurikorpi – Salmenkylä	1.2.1984	14
Mäntyluoto – Tahkoluoto	1.2.1984	11
Lautiosaari – Elijärvi	31.10.1985	8
Hovinsaari – Mussalo	1.3.1989	5
Martinlaakso – Vantaankoski	2.9.1991	1

1) Purchased by the State 1. 5.1875
2) " " " " 1.10.1917
3) " " " " 1. 7.1950
4) " " " " 1. 1.1916
5) " " " " 1. 3.1926
6) " " " " 1. 1.1959

1.4 OPERATIONS ON THE RAILWAY NETWORK



1.5 DISTANCES BETWEEN CERTAIN STATIONS, KM



1.6 TRACK SUPERSTRUCTURE

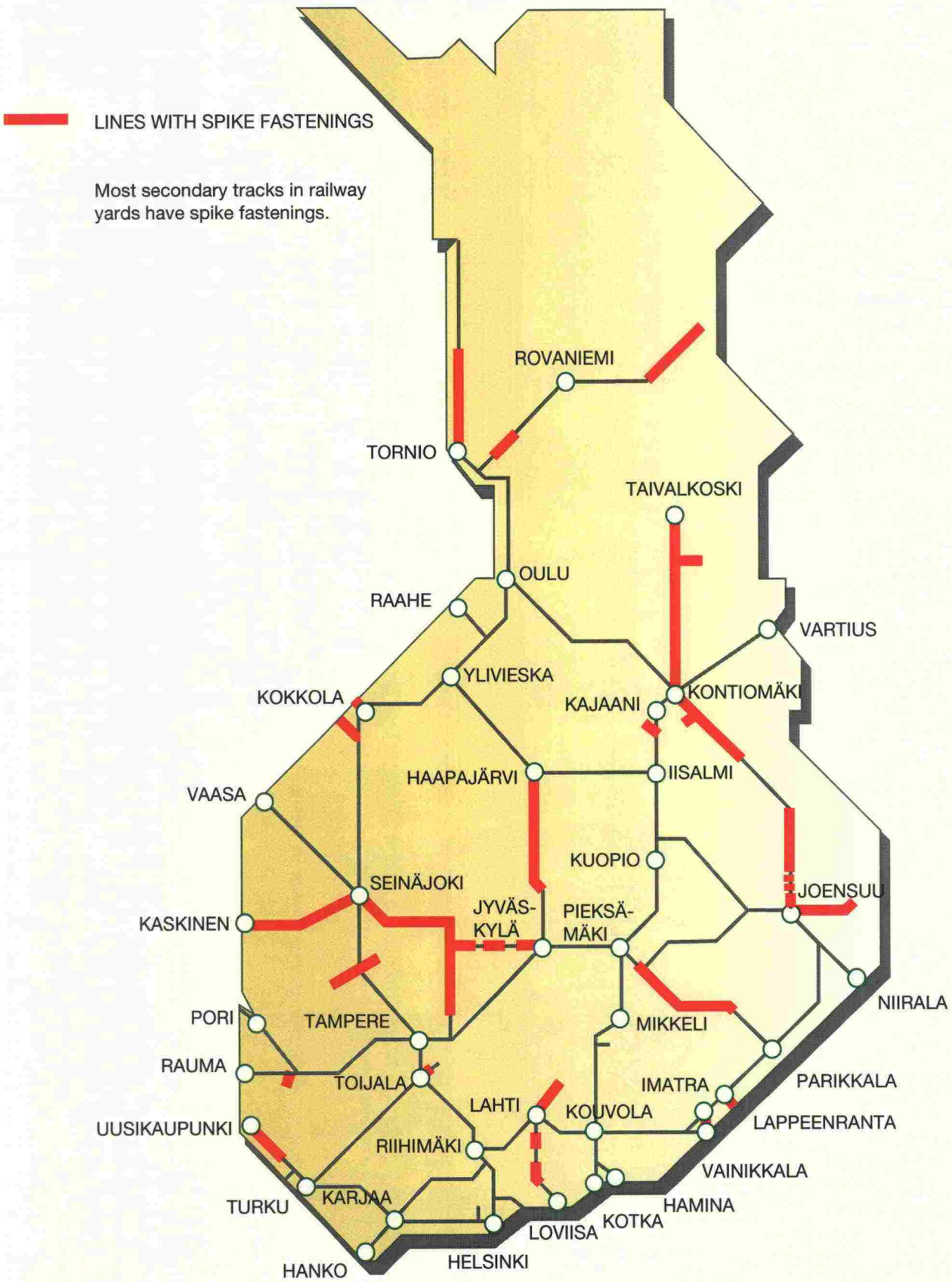
Tracks with concrete sleepers

1980		1985		1990		1995		1996		1997		1998	
km	%	km	%	km	%	km	%	km	%	km	%	km	%
740	11	910	14	1 050	16	1 400	22	1 576	25	1 867	29	2 204	34

1.6 TRACK SUPERSTRUCTURE

Lines with spike fastenings

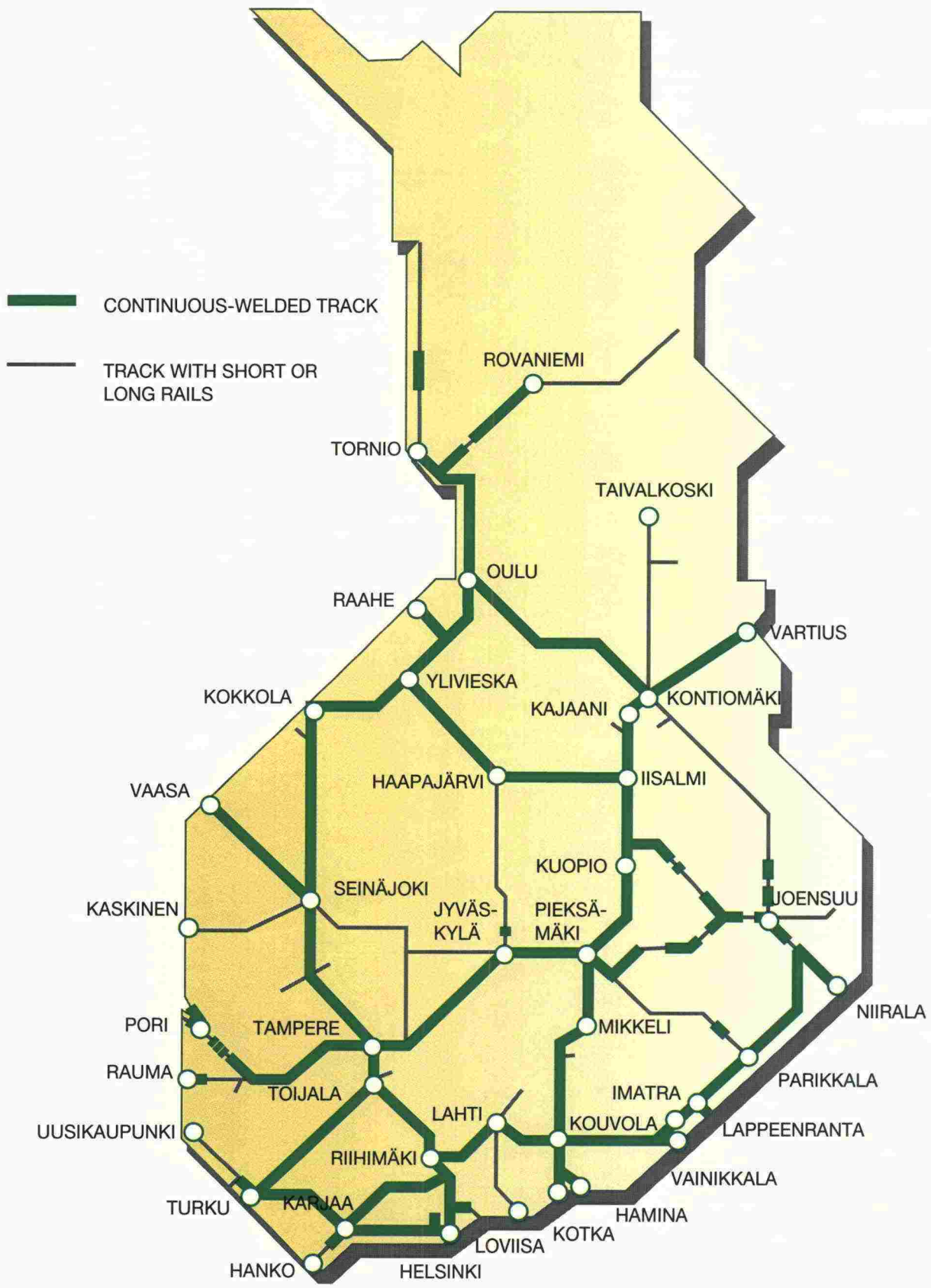
1980		1985		1990		1995		1996		1997		1998	
km	%	km	%	km	%	km	%	km	%	km	%	km	%
3 200	49	2 700	42	2 300	36	2 100	33	2 000	31	1 900	30	1 700	26



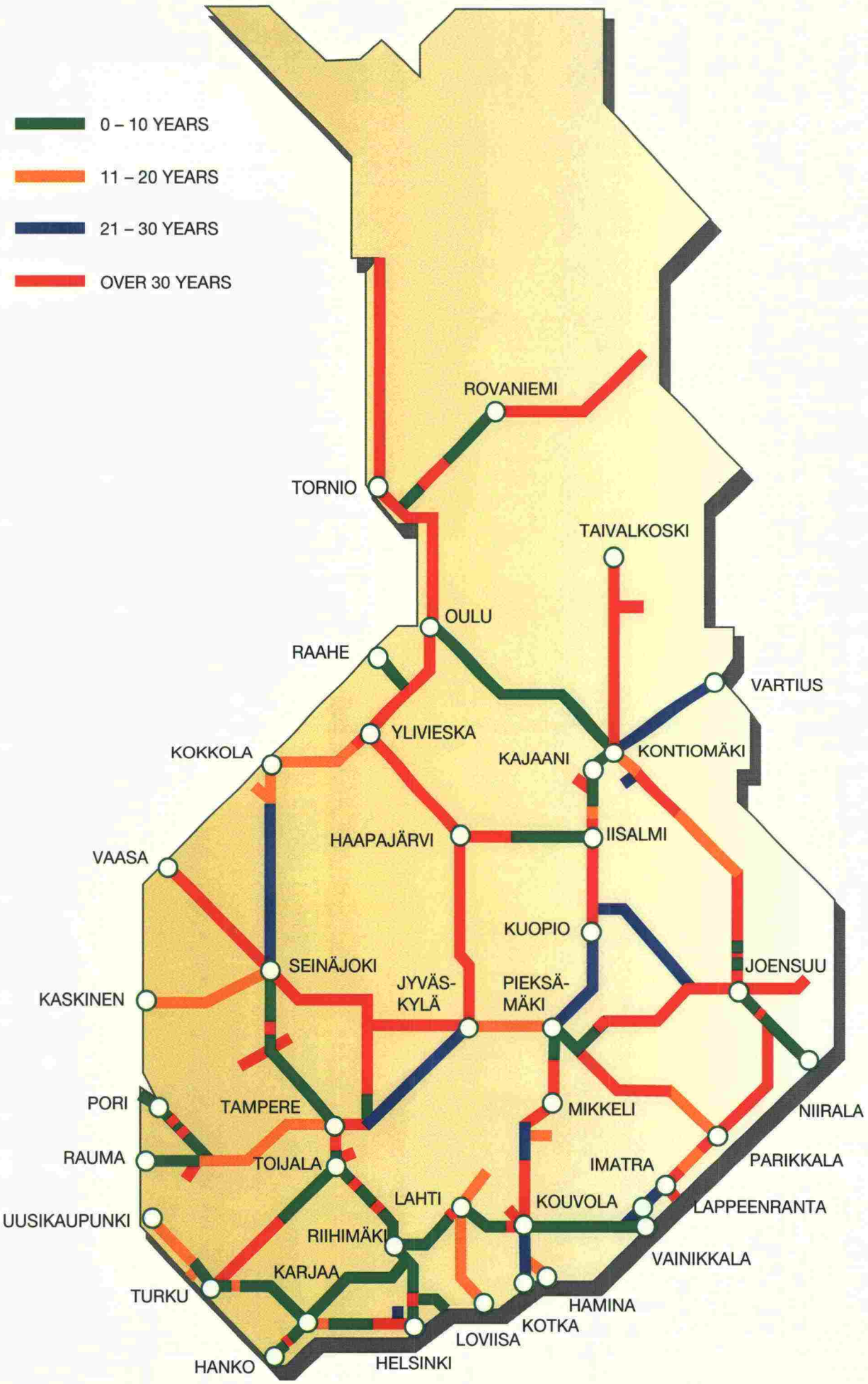
1.6 TRACK SUPERSTRUCTURE

Continuous-welded tracks

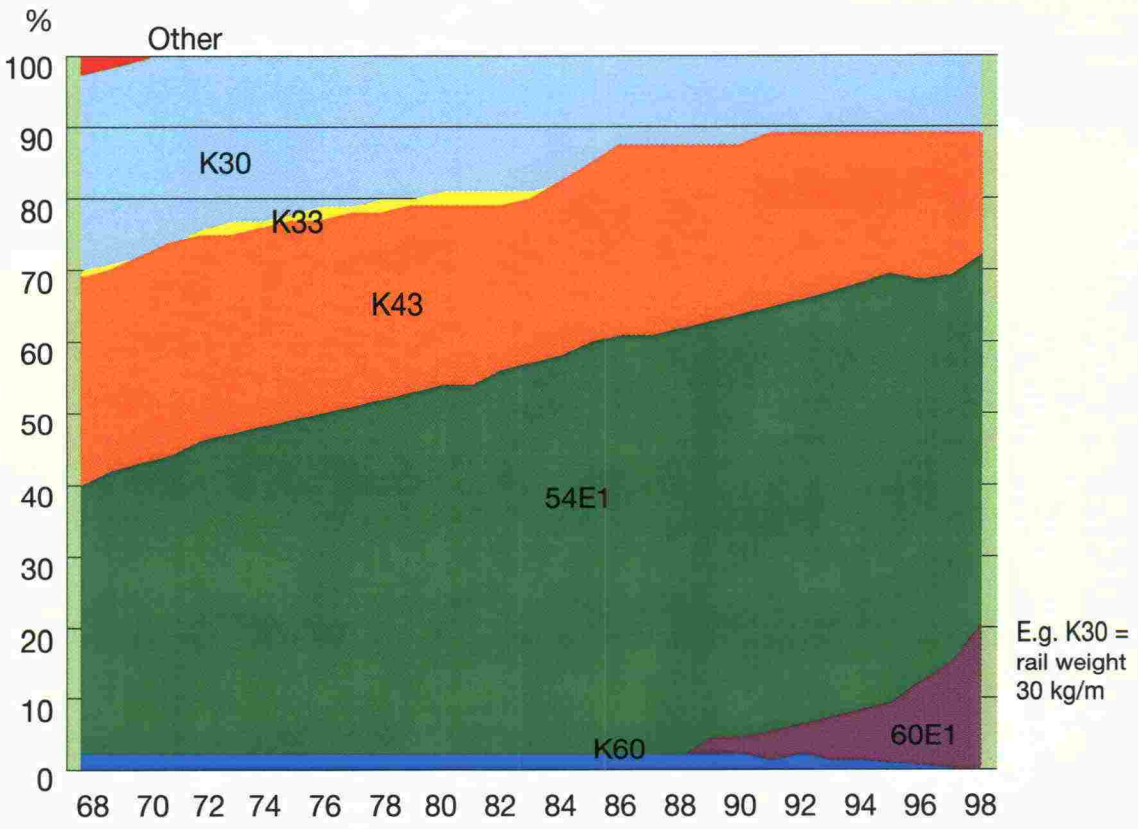
1980		1985		1990		1995		1996		1997		1998	
km	%	km	%	km	%	km	%	km	%	km	%	km	%
2 900	44	3 190	50	3 430	54	3 660	57	3 746	59	3 848	60	4 086	64



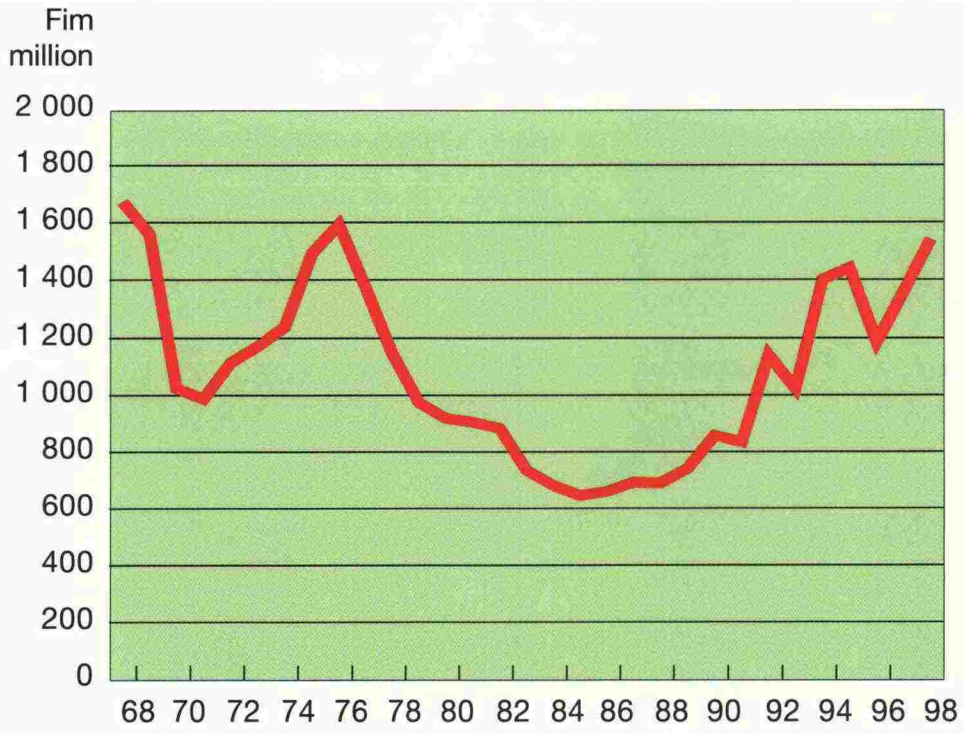
1.7 AGE OF TRACK SUPERSTRUCTURE



1.8 RAILS ON MAIN LINES IN 1968 - 1998

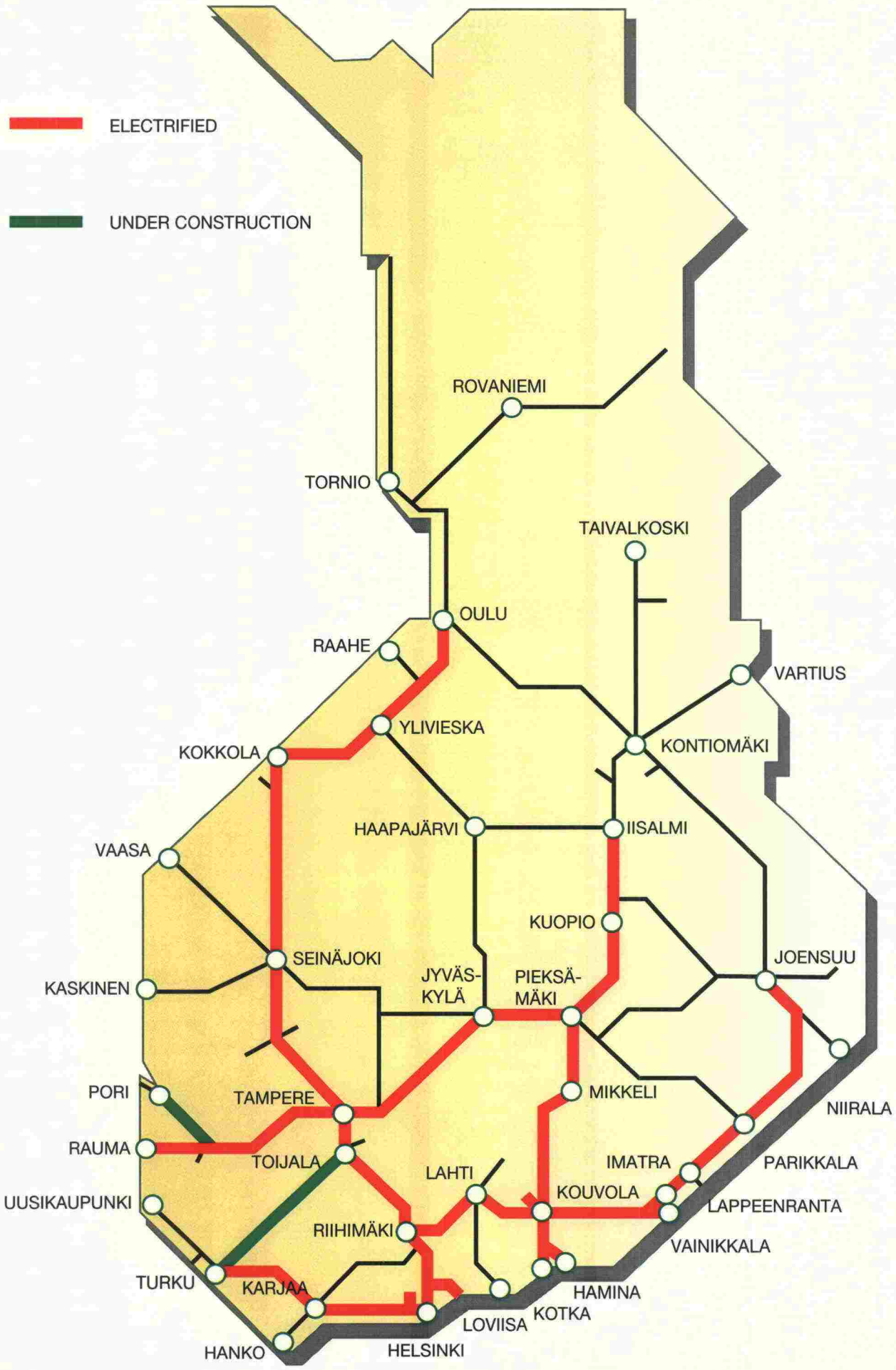


1.9 INVESTMENTS IN TRACK CONSTRUCTION AND MAINTENANCE IN 1968 - 1998 [1)]

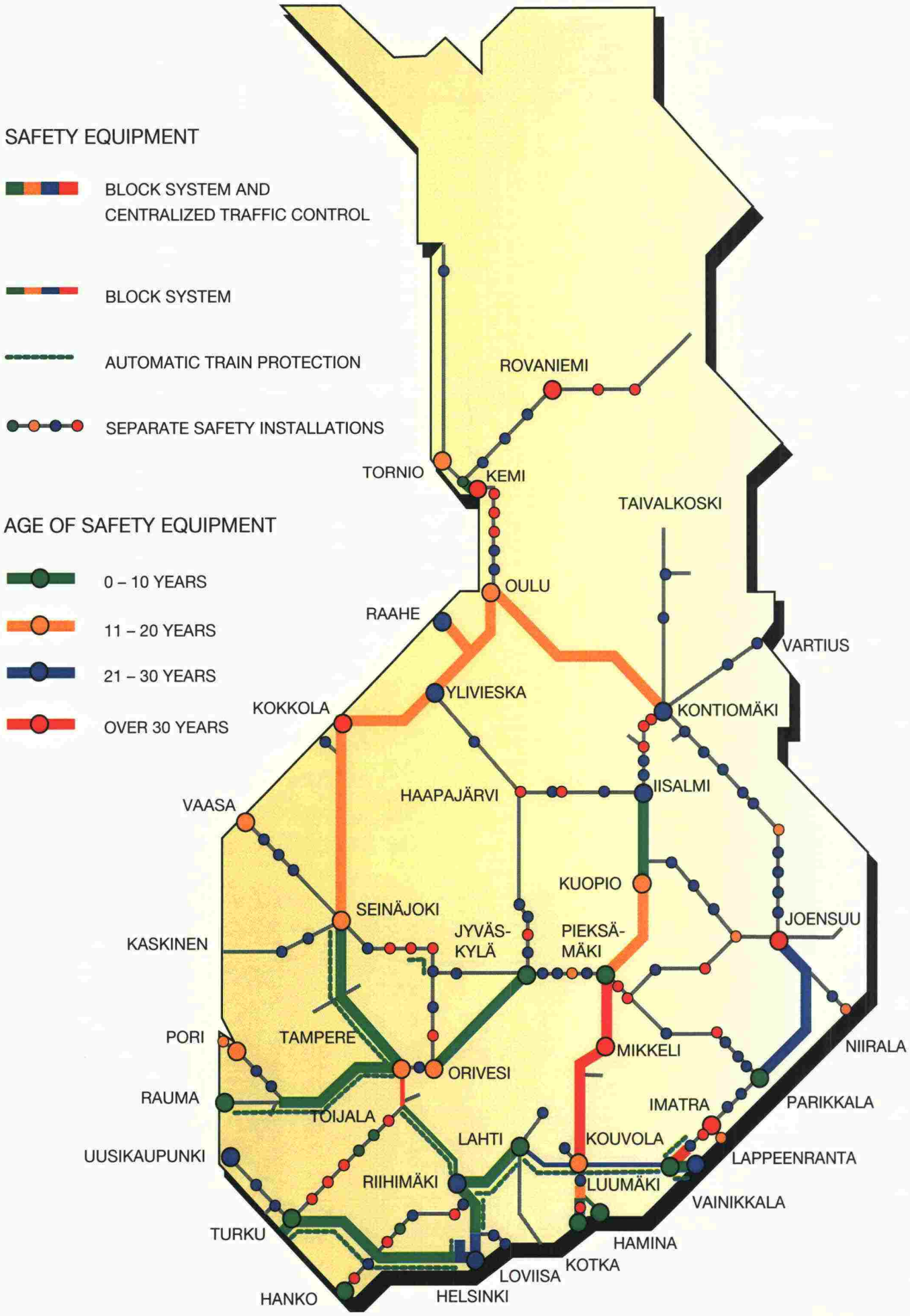


[1)] At fixed 1998 prices.

1.10 ELECTRIFIED LINES



1.11 SAFETY EQUIPMENT AND ITS AGE



1.12 CROSSINGS BETWEEN RAILWAY AND ROAD

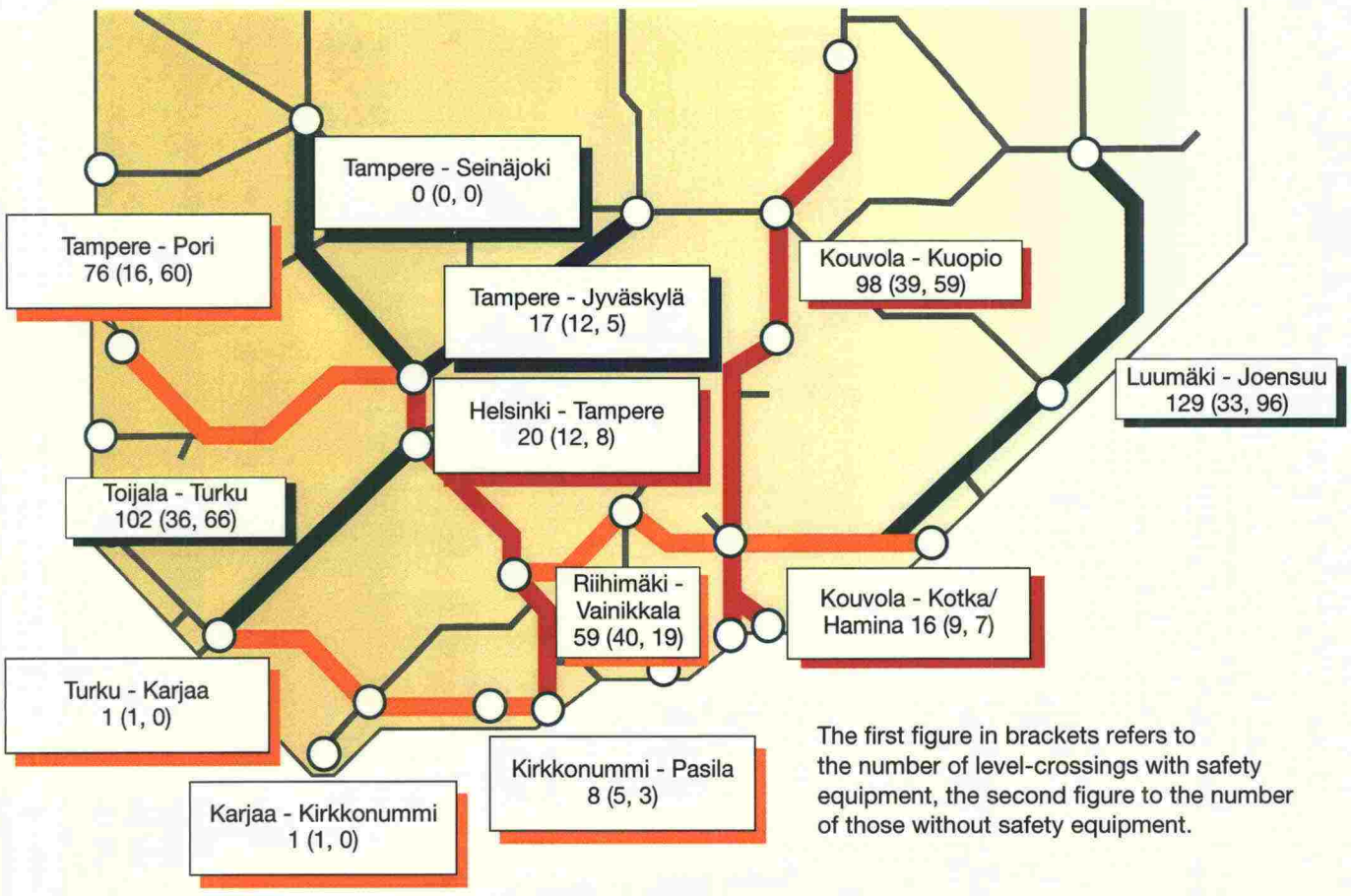
Level-separated crossings		
Overpasses		797
Underpasses		983
	Total	1 780
Level-crossings [1]		
With safety equipment		
Full barriers		3
Half-barries		820
Flashing lights and (or) acoustic signals		140
	Total	963
Without safety equipment		4 337
	Total	5 300
Grand total		7 080

[1] Including private rails.

1.13 NUMBER OF LEVEL-CROSSINGS AND LEVEL-CROSSING SAFETY EQUIPMENT ON THE MOST IMPORTANT MAIN LINES

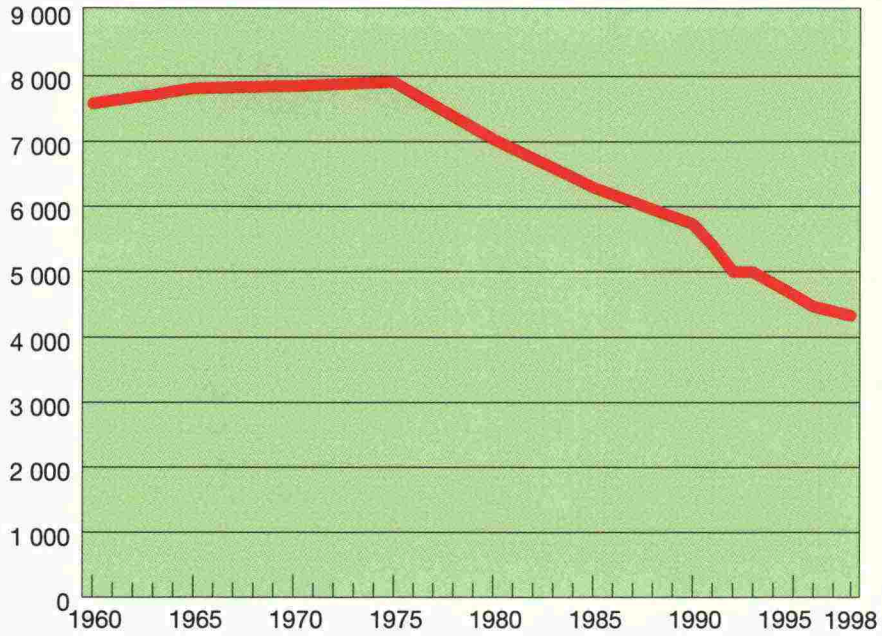
Total of level-crossings	527
With safety equipment	204
Without safety equipment	323

Footpaths between platforms and service roads are not included in the statistics.

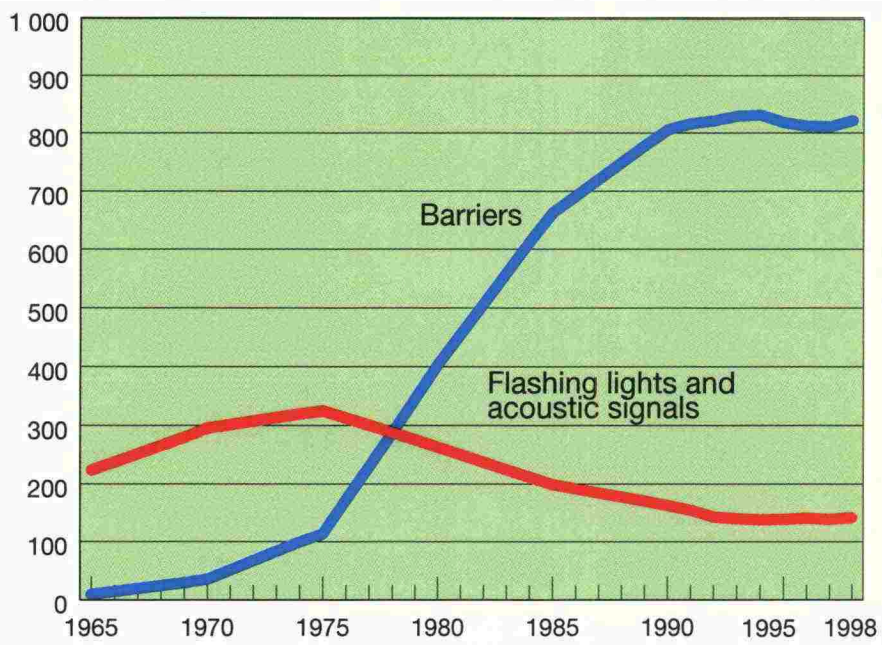


The first figure in brackets refers to the number of level-crossings with safety equipment, the second figure to the number of those without safety equipment.

1.14 DEVELOPMENT OF THE NUMBER OF LEVEL-CROSSINGS ON THE STATE-OWNED LINES IN 1960 - 1998



1.15 DEVELOPMENT OF THE NUMBER OF LEVEL-CROSSING SAFETY EQUIPMENT IN 1965 - 1998



1.16 RAILWAY OPERATING POINTS

		1997	1998
Railway operating points	**number**	**435**	**439**
Passenger traffic		92	92
Freight traffic		211	215
Passenger and freight traffic		132	132

1.17 BUILDINGS

	Finnish Rail Administration		VR	
	number	1 000 rm³	number	1 000 rm³
Administrative and traffic buildings	317	381	88	809
Freight terminals, depots, repair workshops	137	373	93	1 479
Workshops and main warehouses	–	–	59	1 283
Warehouses	318	212	34	33
Residential buildings	735	411	20	72
Outhouses of residential buildings	1 826	221	22	4
Other buildings	773	261	95	240
Total	4 106	1 859	411	3 920

1.18 LAND AND WATER AREAS

	Finnish Rail Administration	VR
	hectares	hectares
Land areas	28 800	650
Water areas	750	–
Total	29 550	650

1.19 VR'S TRACTIVE STOCK BY TYPE OF TRACTION

	Number	Power (kW)	Total power (kW)
Electric locomotives			
Sr1	110	3 100	341 000
Sr2	19	6 000	114 000
Total	129		455 000
Diesel locomotives			
Dv12	192	1 000	192 000
Dv15	28	620	17 360
Dv16	28	700	19 600
Dr13	19	2 060	39 140
Dr14	24	875	21 000
Dr16	2	1 500	3 000
Dr16	21	1 677	35 217
Total	314		327 317
Electric railcars			
Sm1	50	860	43 000
Sm2	50	620	31 000
Sm3	2	4 000	8 000
Total	102		82 000
Other	216		34 125
Total tractive stock	761		898 442

1.20 VR'S PASSENGER STOCK AND PASSENGER ACCOMMODATION[1)]

Passanger stock in commercial traffic	number	**1 002**
Passenger accommodation		62 893
Metal-bodied day coaches	number	537
Passenger accommodation		38 300
Railcars and railcar trailers	number	212
Passenger accommodation		19 432
Restaurant cars	number	70
Guard's vans	number	11
Car-carriers	number	24
Metal-bodied sleeping cars	number	113
Passenger accommodation		3 909
Other coaches	number	35
Passenger accommodation		1 252
Total passenger accommodation		62 893
Seats		58 752
Sleeping accommodation		4 141

[1)] Excluding stock withdrawn from service.

1.21 FREIGHT WAGONS AND THEIR CARRYING CAPACITY[1)]

VR-owned freight wagons in commercial traffic		
Number of wagons		11 914
2-axled		6 295
4-axled		5 615
Other		4
Carrying capacity	tons	501 243
Covered wagons		
Number of wagons		4 802
2-axled		3 612
4-axled		1 190
Carrying capacity	tons	169 944
Open wagons		
Number of wagons		6 605
2-axled		2 683
4-axled		3 918
Other		4
Carrying capacity	tons	302 564
Tank wagons		
Number of wagons		507
2-axled		0
4-axled		507
Carrying capacity	tons	28 735
Private owner's wagons		
Number of wagons		209
2-axled		8
3-axled		11
4-axled		190
Carrying capacity	tons	10 739

[1)] Excluding wagons withdrawn from service.

2 VR'S TRAIN TRAFFIC

2.1 MAIN DATA ON TRAIN AND TRACTIVE STOCK PERFORMANCE IN 1994 - 1998

		1994	1995	1996	1997[1)]	1998
Train performance						
Gross ton-km	**1 000 000**	**28 104.8**	**27 154.3**	**26 797.4**	**32 617.4**	**32 669.4**
Passenger traffic		7 920.6	8 100.5	8 173.5	9 744.1	9 664.9
	%	28.2	29.8	30.5	29.9	29.6
Freight traffic		20 183.6	19 052.8	18 623.1	22 872.8	23 003.6
	%	71.8	70.2	69.5	70.1	70.4
Light engines		0.6	1.0	0.8	1.0	0.9
	%	0.0	0.0	0.0	0.0	0.0
Gross hauled ton-km	**1 000 000**	**24 865.8**	**23 978.6**	**23 624.2**	**29 004.3**	**29 001.0**
Passenger traffic		6 431.9	6 616.6	6 715.8	8 056.7	7 970.0
	%	25.9	27.6	28.4	27.8	27.5
Freight traffic		18 433.9	17 362.0	16 908.4	20 947.6	21 031.0
	%	74.1	72.4	71.6	72.2	72.5
Train-km	**1 000**	**41 344**	**40 973**	**40 621**	**44 137**	**44 481**
By category of train						
Passenger trains		24 745	24 974	25 024	27 105	27 105
	%	59.9	61.0	61.6	61.4	60.9
Freight trains		16 599	15 999	15 597	17 032	17 376
	%	40.1	39.0	38.4	38.6	39.1
By type of traction						
Diesel tractive stock		16 242	14 460	13 559	14 399	13 854
	%	39.3	35.3	33.4	32.6	31.2
Diesel locomotives		16 171	14 424	13 551	14 397	13 853
Light rail motor tractors		71	36	8	2	1
Electric tractive stock		25 102	26 513	27 062	29 738	30 627
	%	60.7	64.7	66.6	67.4	68.8
Electric locomotives		18 473	19 881	20 058	22 110	22 950
Electric railcars		6 629	6 632	7 004	7 628	7 677

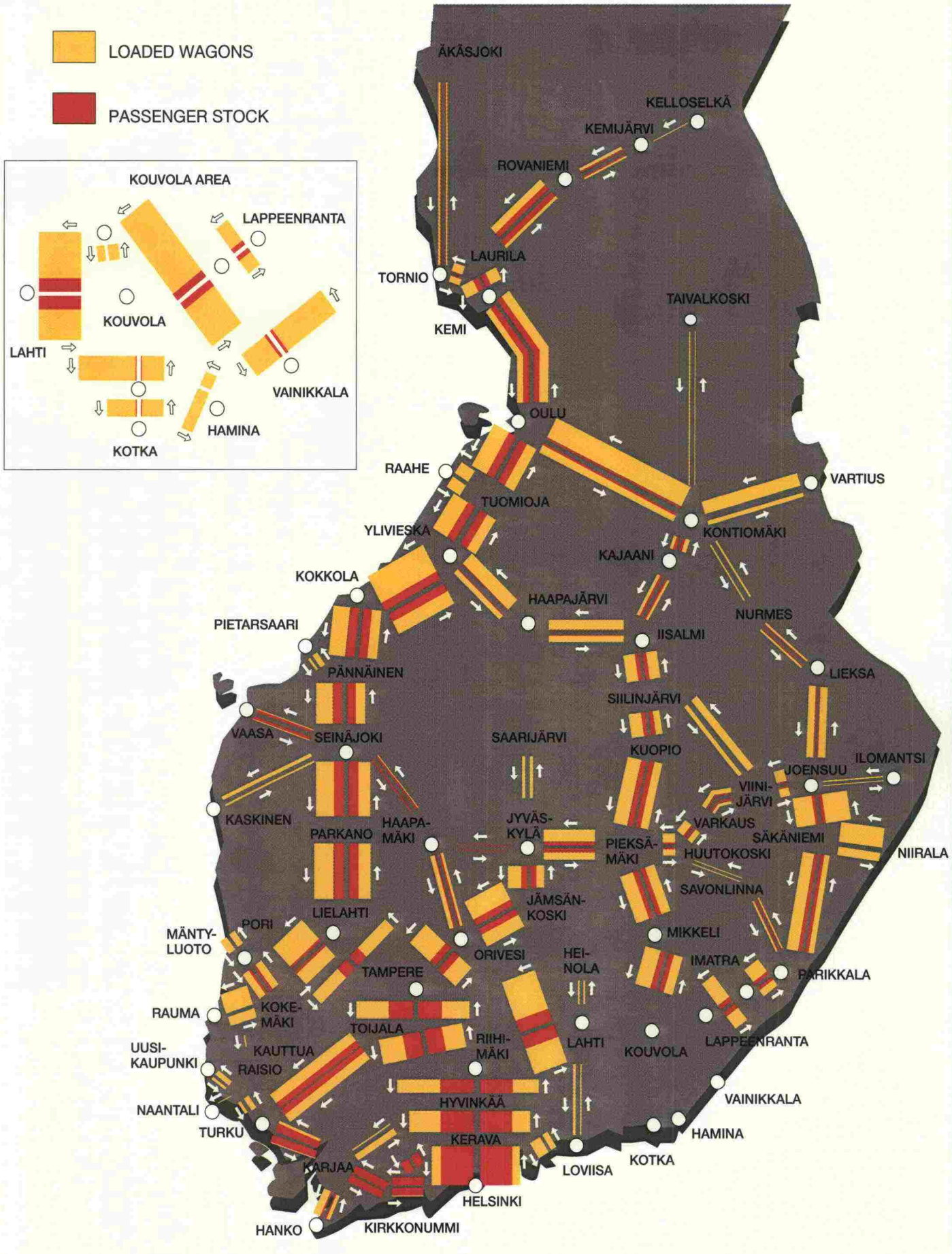
[1)] Change in statistics in 1997. The figures are not fully compatible with the corresponding figures for earlier years.

		1994	1995	1996	1997	1998
Vehicle-axle-km	**1 000 000**	**2 228.7**	**2 163.8**	**2 141.7**	**2 285.2**	**2 282.6**
By category of train						
Passenger traffic		612.6	643.3	644.7	688.3	689.8
	%	27.5	29.7	30.1	30.1	30.2
Freight traffic		1 616.1	1 520.5	1 497.0	1 596.9	1 592.8
	%	72.5	70.3	69.9	69.9	69.8
By category of vehicle						
Passenger stock		610.6	641.3	644.1	690.7	691.7
Coaches		472.9	499.5	506.6	551.5	550.4
Electric railcars		77.3	78.3	76.2	92.0	93.9
Other coaches		47.8	49.8	48.1	47.2	47.4
Wagons		1 618.1	1 522.5	1 497.6	1 594.5	1 590.9
Loaded wagons		933.8	852.2	832.9	872.6	863.2
Empty wagons		684.3	670.3	664.7	721.9	727.7
Coefficient of empty running of a wagon		42.3	44.0	44.4	45.0	45.0
VR-owned wagons		1 119.6	1 047.0	1 026.3	1 060.8	1 059.0
Private owners' wagons		79.7	71.4	61.3	61.5	50.8
CIS wagons		418.8	404.1	410.0	472.2	481.1
Tractive stock performance						
Locomotive-km	**1 000**	**62 265**	**63 080**	**61 623**	**63 342**	**63 966**
Diesel tractive stock		29 823	28 848	26 697	27 235	26 525
	%	47.9	45.7	43.3	43.0	41.5
Diesel locomotives		29 473	28 646	26 558	27 106	26 429
Light rail motor tractors		350	202	139	129	96
Electric tractive stock		32 442	34 232	34 926	36 107	37 441
	%	52.1	54.3	56.7	57.0	58.5
Electric locomotives		22 825	24 509	24 924	25 610	26 709
Electric railcars		9 617	9 723	10 002	10 497	10 732

2.2 GROSS TON-KM AND AVERAGE TRAIN WEIGHTS (INCLUDING LOCOMOTIVE) BY TYPE OF TRACTION AND CATEGORY OF TRAIN IN 1998

	Passenger traffic						Freight traffic			
				Slow trains						
	Pendolino trains	Express trains	Fast trains	Commuter traffic in the Helsinki Area	Other stoplow trains	Total or on average	Freight trains	Pick-up freight trains	Total or on average	Grand total or on average
Gross ton-km										
1 000 000	**192**	**1 063**	**7 508**	**630**	**272**	**9 665**	**22 800**	**204**	**23 004**	**32 669**
Diesel locomotives	–	53	1 868	–	94	2 015	9 662	187	9 849	11 864
Electric locomotives	–	1 010	5 640	67	69	6 786	13 138	11	13 149	19 935
Electric railcars	192	–	–	563	109	864	–	–	–	864
Light rail motor tractors	–	–	–	–	–	–	0	6	6	6
Average train weights (including locomotive), tons										
Hauled by locomotives	–	423.4	472.5	455.8	182.9	356.6	1 357.1	503.7	1 323.9	864.1
Diesel locomotives	–	441.7	361.8	–	160.1	343.3	1 268.9	371.1	1 231.9	856.5
Electric locomotives	–	422.1	525.8	455.8	227.0	500.0	1 435.9	719.3	1 402.4	868.7
Light rail motor tractors	–	–	–	–	–	–	–	–	–	–
Hauled by railcars										
Electric railcars	371.1	–	–	93.9	94.4	112.7	–	–	–	112.7

2.3 GROSS TONS CARRIED ON THE DIFFERENT SECTIONS OF LINE IN 1998



2.4 VEHICLE-AXLE-KM BY CATEGORY OF TRAIN AND VEHICLE IN 1998

Train category and type of traction	VR-owned passenger coaches	Electric railcars	VR-owned other passenger coaches	Russian passenger coaches	VR-owned covered wagons	VR-owned open wagons	VR-owned other wagons	CIS wagons	Private owners' wagons	Total
	1 000 000 vehicle-axle-km									
Passenger traffic	**546.7**	**93.9**	**31.6**	**15.8**	**0.3**	**0.5**	**1.0**	–	–	**689.8**
Pendolino trains	–	12.4	–	–	–	–	–	–	–	12.4
Express trains	70.5	–	–	–	–	–	–	–	–	70.5
Diesel locomotives	3.4	–	–	–	–	–	–	–	–	3.4
Electric locomotives	67.1	–	–	–	–	–	–	–	–	67.1
Fast trains	462.5	–	31.6	15.8	0.3	0.5	1.0	–	–	511.7
Diesel locomotives	112.5	–	8.6	–	0.1	0.1	0.1	–	–	121.4
Electric locomotives	350.0	–	23.0	15.8	0.2	0.4	0.9	–	–	390.3
Slow trains										
Commuter traffic in the Helsinki Area	4.9	71.5	–	–	–	–	–	–	–	76.4
Diesel locomotives	–	–	–	–	–	–	–	–	–	–
Electric locomotives	4.9	–	–	–	–	–	–	–	–	4.9
Electric railcars	–	71.5	–	–	–	–	–	–	–	71.5
Other slow trains	8.8	10.0	–	–	–	–	–	–	–	18.8
Diesel locomotives	4.9	–	–	–	–	–	–	–	–	4.9
Electric locomotives	3.9	–	–	–	–	–	–	–	–	3.9
Electric railcars	–	10.0	–	–	–	–	–	–	–	10.0
Freight traffic	**3.7**	**–**	**–**	**–**	**349.9**	**548.5**	**158.8**	**481.1**	**50.8**	**1 592.8**
Freight trains	2.9	–	–	–	348.5	539.2	158.1	479.9	50.3	1 578.9
Diesel locomotives	1.5	–	–	–	126.2	278.2	53.6	174.3	26.6	660.4
Electric locomotives	1.4	–	–	–	222.3	261.0	104.5	305.6	23.7	918.5
Pick-up freight trains	0.8	–	–	–	1.4	9.3	0.7	1.2	0.5	13.9
Diesel locomotives	0.3	–	–	–	1.4	9.3	0.7	1.2	0.5	13.4
Electric locomotives	0.5	–	–	–	–	–	–	–	–	0.5
Total	**550.4**	**93.9**	**31.6**	**15.8**	**350.2**	**549.0**	**159.8**	**481.1**	**50.8**	**2 282.6**
Diesel locomotives	122.6	–	8.6	–	127.7	287.6	54.4	175.5	27.1	803.5
Electric locomotives	427.8	–	23.0	15.8	222.5	261.4	105.4	305.6	23.7	1 385.2
Electric railcars	–	93.9	–	–	–	–	–	–	–	93.9
Grand total	**550.4**	**93.9**	**31.6**	**15.8**	**350.2**	**549.0**	**159.8**	**481.1**	**50.8**	**2 282.6**

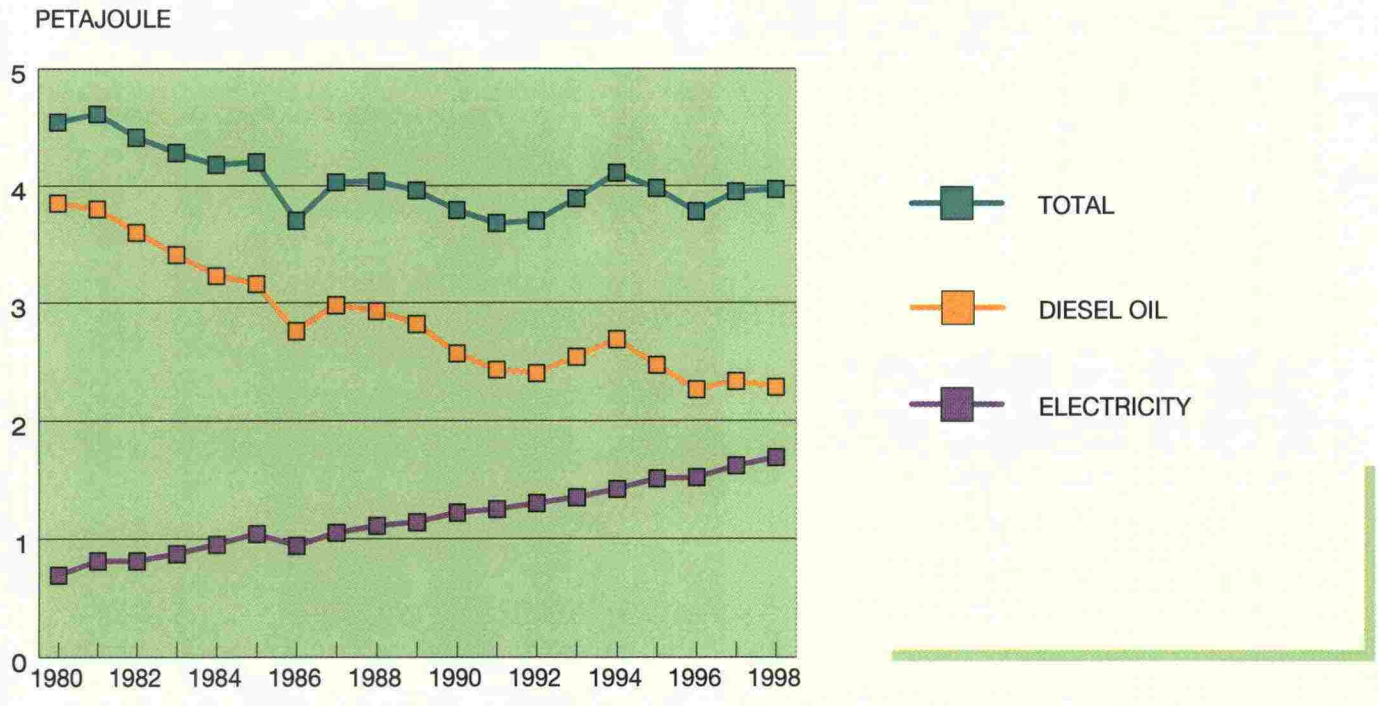
2.5 ENERGY CONSUMPTION IN TRAIN TRAFFIC IN 1980 - 1998

Energy consumption

Year	Electricity		Diesel oil		Total
	million kWh	peta-joule [1]	million l	peta-joule	peta-joule
1980	191	0.69	108.6	3.85	4.54
1981	224	0.81	107.0	3.80	4.61
1982	225	0.81	101.4	3.60	4.41
1983	242	0.87	96.2	3.41	4.28
1984	265	0.95	90.9	3.23	4.18
1985	290	1.04	88.9	3.16	4.20
1986	260	0.94	77.8	2.76	3.70
1987	291	1.05	83.9	2.98	4.03
1988	308	1.11	82.6	2.93	4.04
1989	316	1.14	79.4	2.82	3.96
1990	340	1.22	72.3	2.57	3.79
1991	346	1.25	68.4	2.43	3.68
1992	361	1.30	67.7	2.40	3.70
1993	374	1.35	71.6	2.54	3.89
1994	395	1.42	75.7	2.69	4.11
1995	419	1.51	69.6	2.47	3.98
1996	422	1.52	63.8	2.26	3.78
1997	450	1.62	65.8	2.33	3.95
1998	470	1.69	64.3	2.28	3.97

[1] Petajoule = 10^{15} joules

ENERGY CONSUMPTION IN TRAIN TRAFFIC

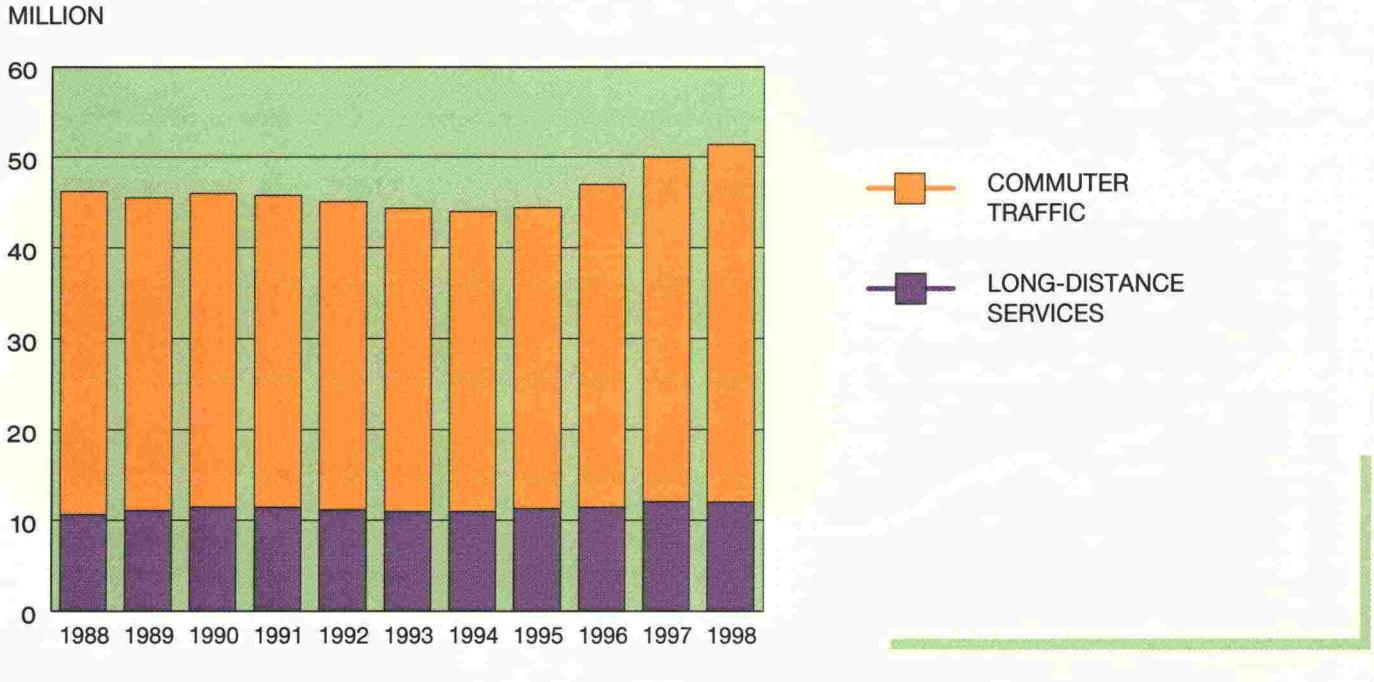


3 VR'S PASSENGER TRAFFIC

3.1 PASSENGER TRAFFIC BY CATEGORY OF TRAFFIC IN 1989 - 1998

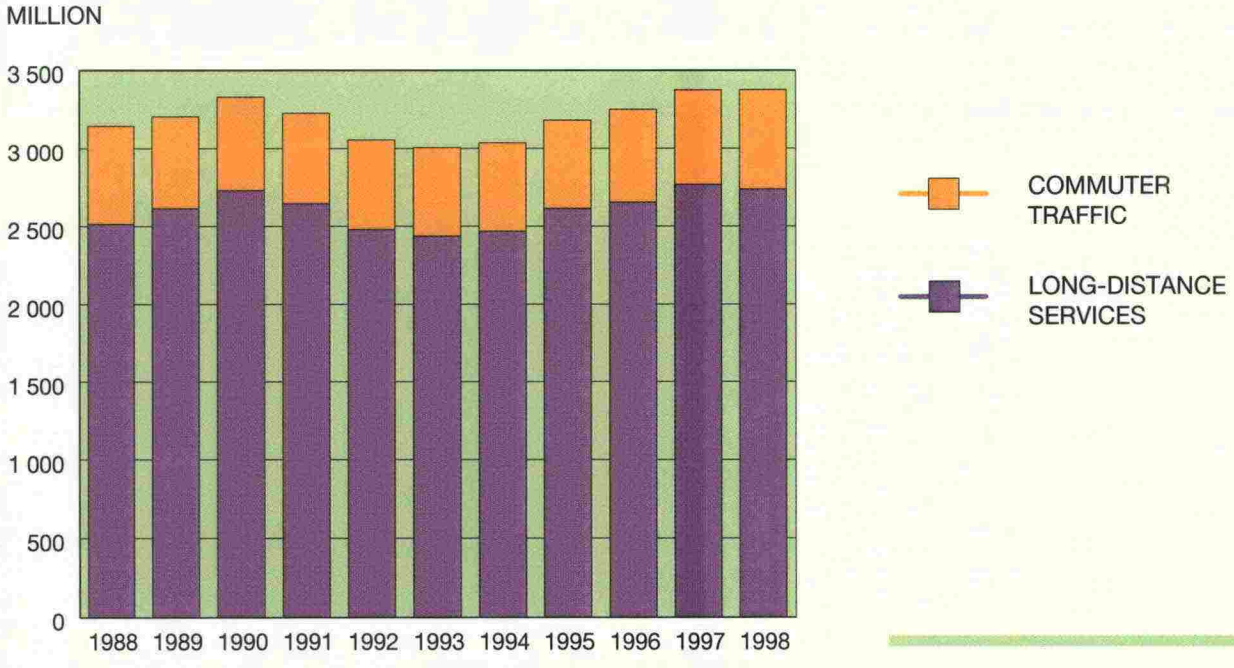
Commercial traffic		1989	1990	1991
Number of journeys	1 000			
Long-distance services		11 066	11 440	11 423
	%	24.3	24.8	24.9
Commuter traffic in the Helsinki Area		34 470	34 558	34 372
	%	75.7	75.2	75.1
	Total	45 536	45 998	45 795
Passenger-km	1 000 000			
Long-distance services		2 614	2 729	2 646
	%	81.5	81.9	81.9
Commuter traffic in the Helsinki Area		593	602	583
	%	18.5	18.1	18.1
	Total	3 207	3 331	3 229

NUMBER OF JOURNEYS IN PASSENGER TRAFFIC IN 1988 - 1998

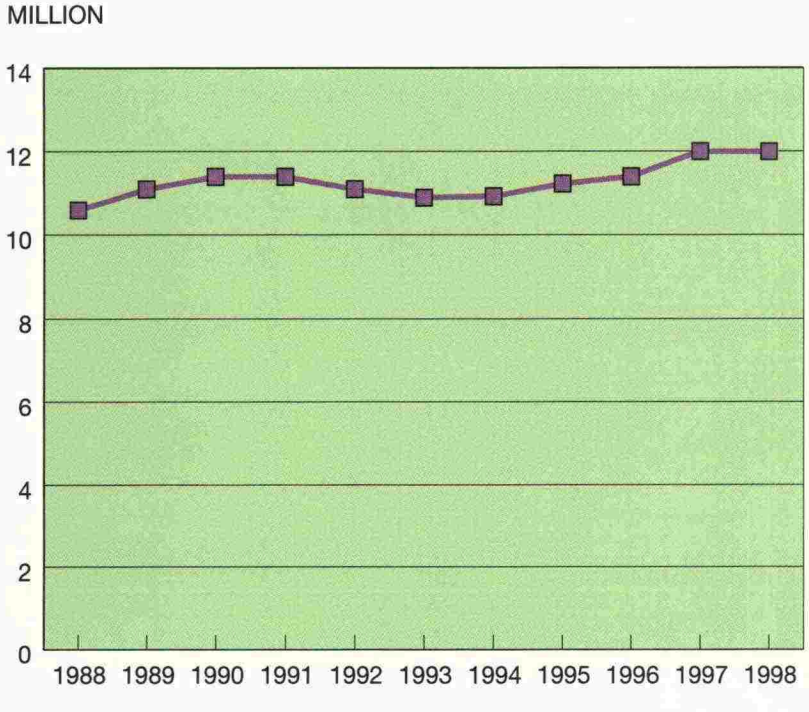


1992	1993	1994	1995	1996	1997	1998
11 131	10 938	10 932	11 266	11 400	12 031	11 985
24.7	24.7	24.9	25.4	24.3	24.1	23.3
33 970	33 424	33 057	33 154	35 600	37 949	39 385
75.3	75.3	75.1	74.6	75.7	75.9	76.7
45 101	44 362	43 989	44 420	47 000	49 980	51 370
2 480	2 437	2 468	2 614	2 655	2 766	2 737
81.1	81.1	81.3	82.1	81.6	81.9	81.0
577	570	569	570	599	610	640
18.9	18.9	18.7	17.9	18.4	18.1	19.0
3 057	3 007	3 037	3 184	3 254	3 376	3 377

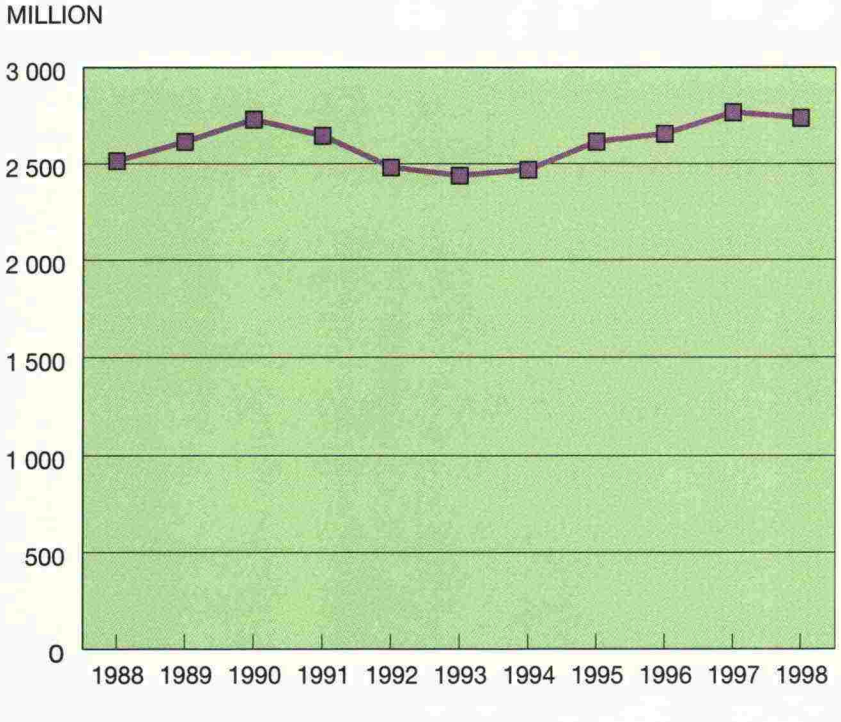
PASSENGER-KILOMETRES IN PASSENGER TRAFFIC IN 1988 - 1998



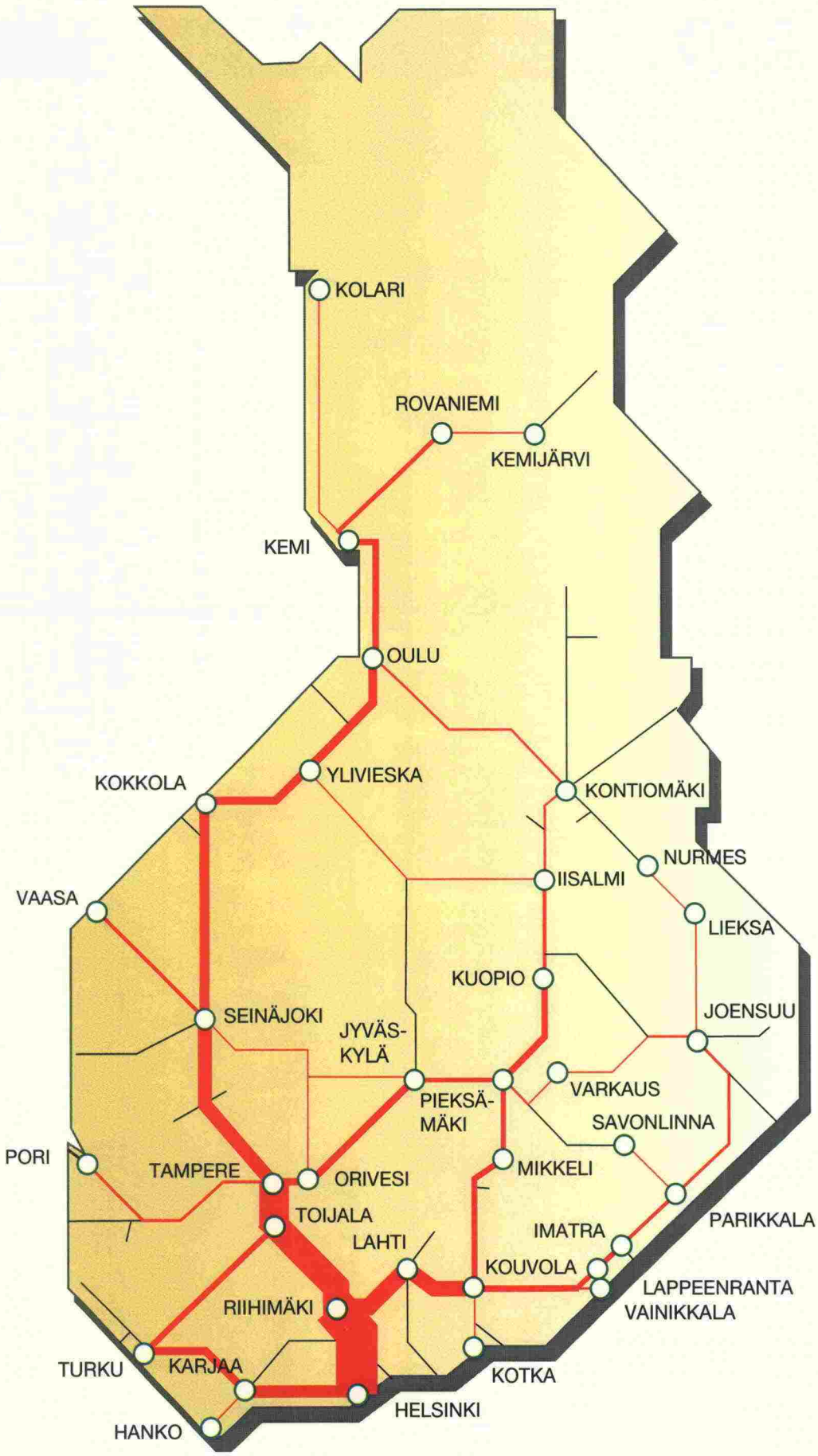
NUMBER OF JOURNEYS IN LONG-DISTANCE TRAFFIC IN 1988 - 1998



PASSENGER-KILOMETRES IN LONG-DISTANCE TRAFFIC IN 1988 - 1998



3.2 PASSENGER FLOWS IN LONG-DISTANCE TRAFFIC IN 1998

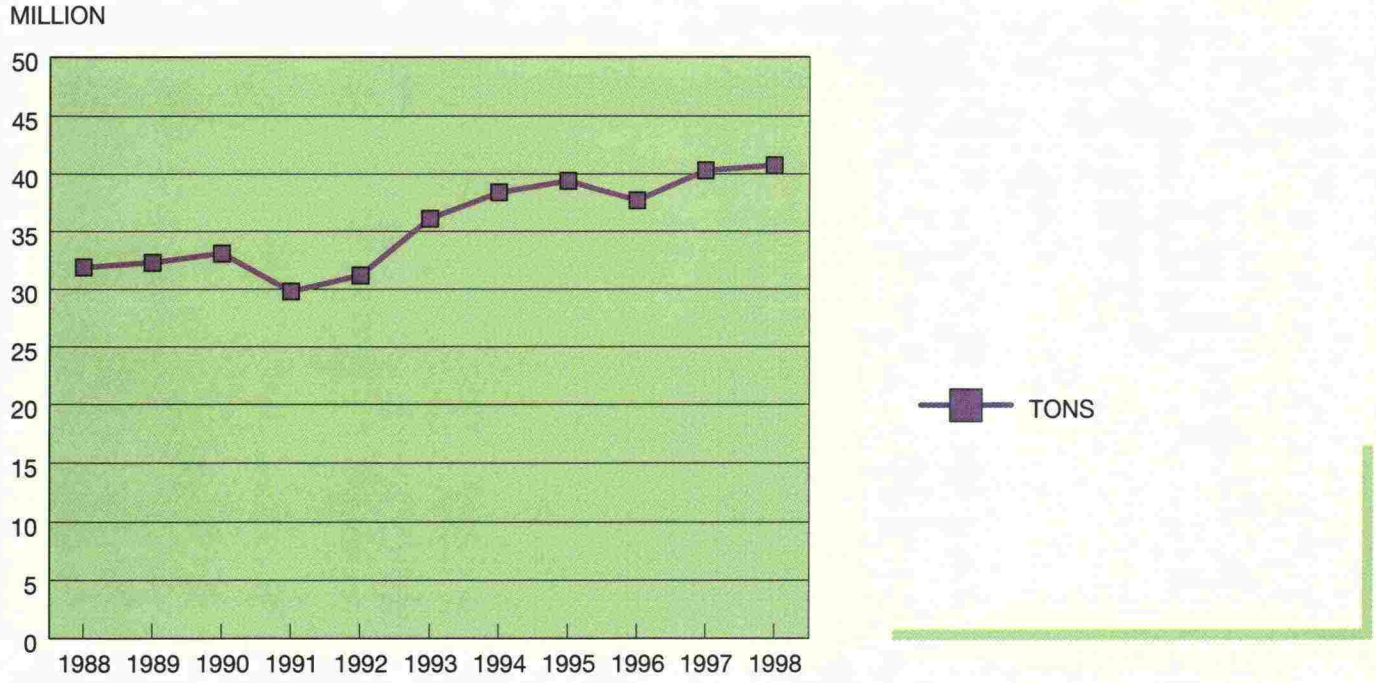


4 VR'S FREIGHT TRAFFIC

4.1 FREIGHT TRAFFIC IN 1989 - 1998

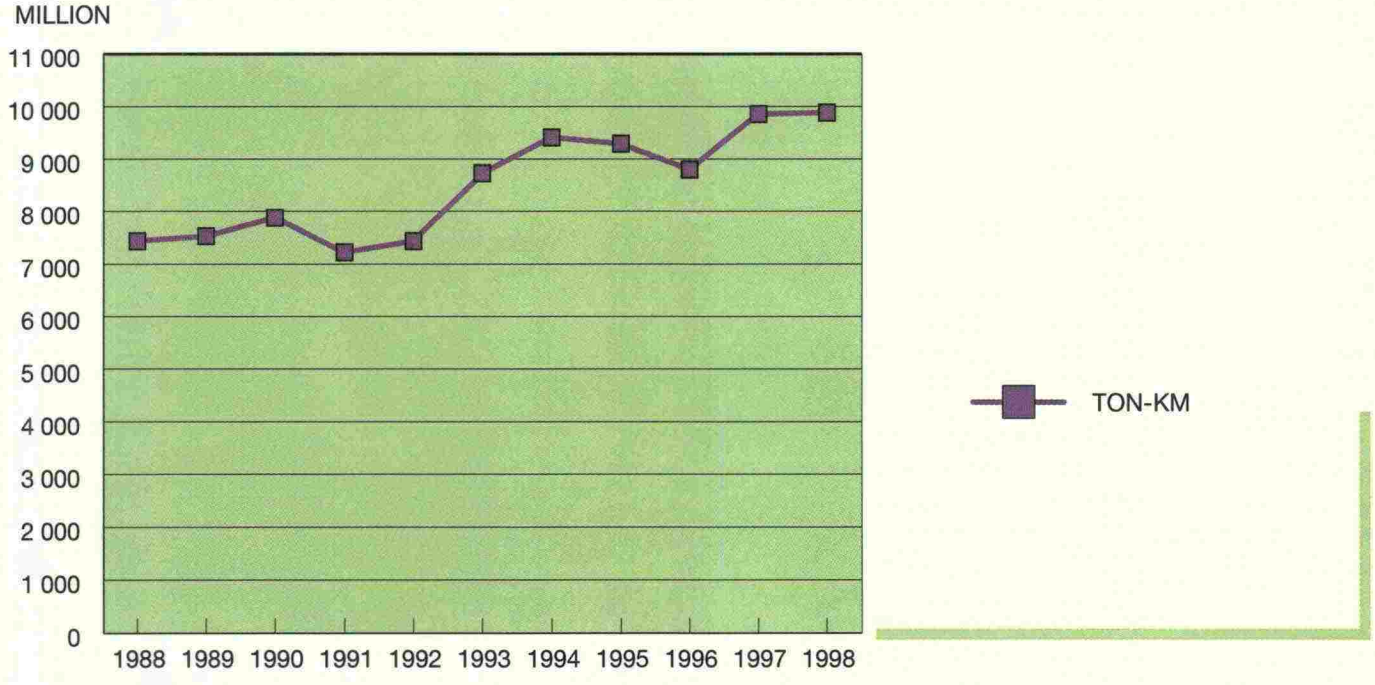
Commercial traffic		1989	1990	1991
Wagonload freight				
Weight of freight	1 000 t	32 300.1	33 112.0	29 820.0
Ton-km	1 000 000	7 525.2	7 877.0	7 219.0
Consignments	1 000	450	462	365
Wagonloads	1 000	898.6	885.8	794.4
Ratios				
Ton-km, commercial freight				
Per length of line	1 000	1 283.5	1 347.4	1 233.4
Per train kilometre of freight trains		442.2	469.2	468.8
Per wagon-axle-km		5.1	5.1	5.3

TONS CARRIED IN WAGONLOAD TRAFFIC IN 1988 - 1998

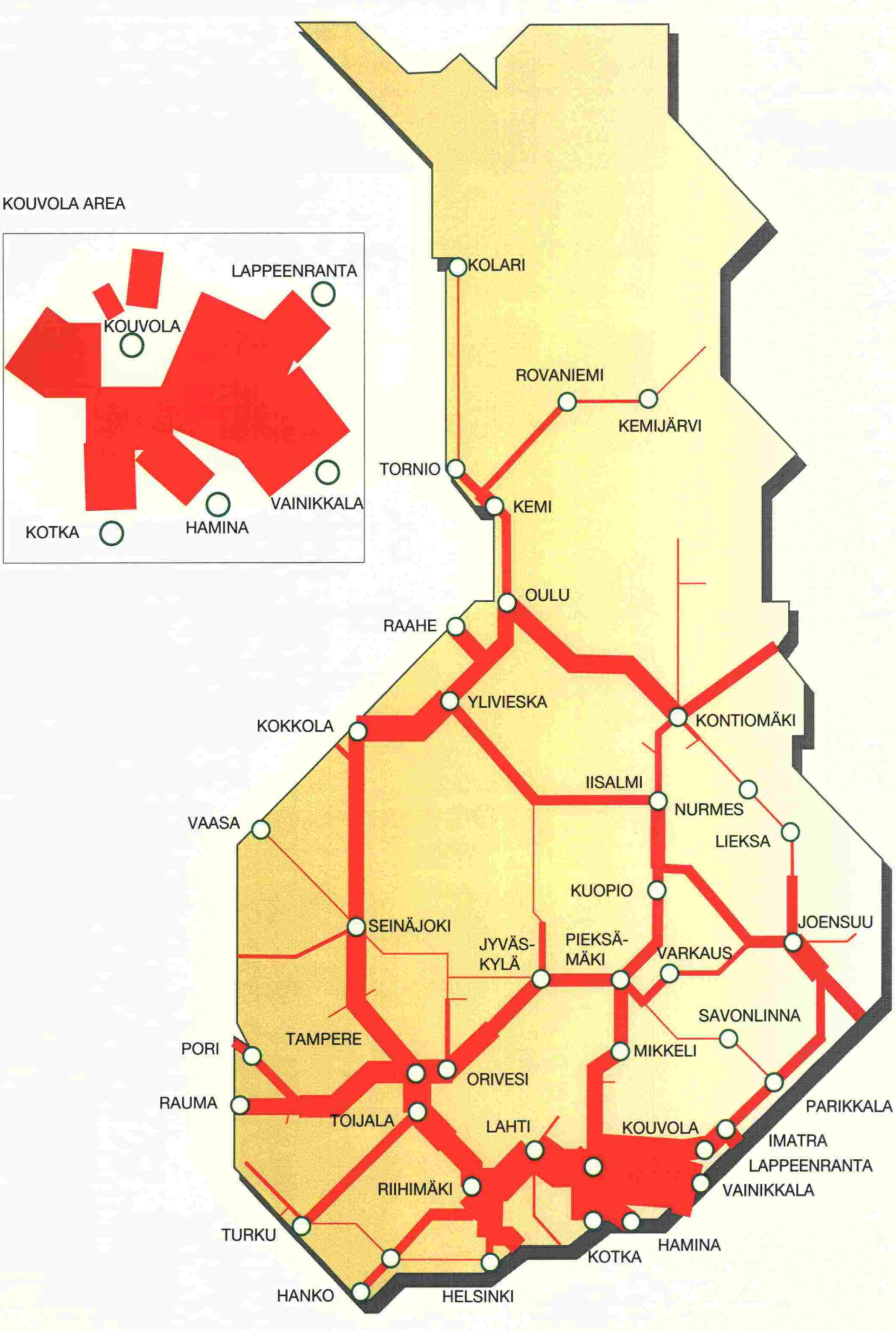


1992	1993	1994	1995	1996	1997	1998
31 205.8	36 109.1	38 414.1	39 387.0	37 717.0	40 321.4	40 739.5
7 431.0	8 736.9	9 412.9	9 292.9	8 805.5	9 856.4	9 885.0
390	450	492	512	501	556	515
812.3	923.3	1 009.2	1 048.4	968.1	1 035.0	1 022.1
1 269.6	1 489.9	1 606.6	1 586.1	1 502.6	1 680.5	1 684.8
508.2	556.2	567.1	580.8	564.8	578.7	568.9
5.4	5.6	5.8	6.1	5.9	6.2	6.2

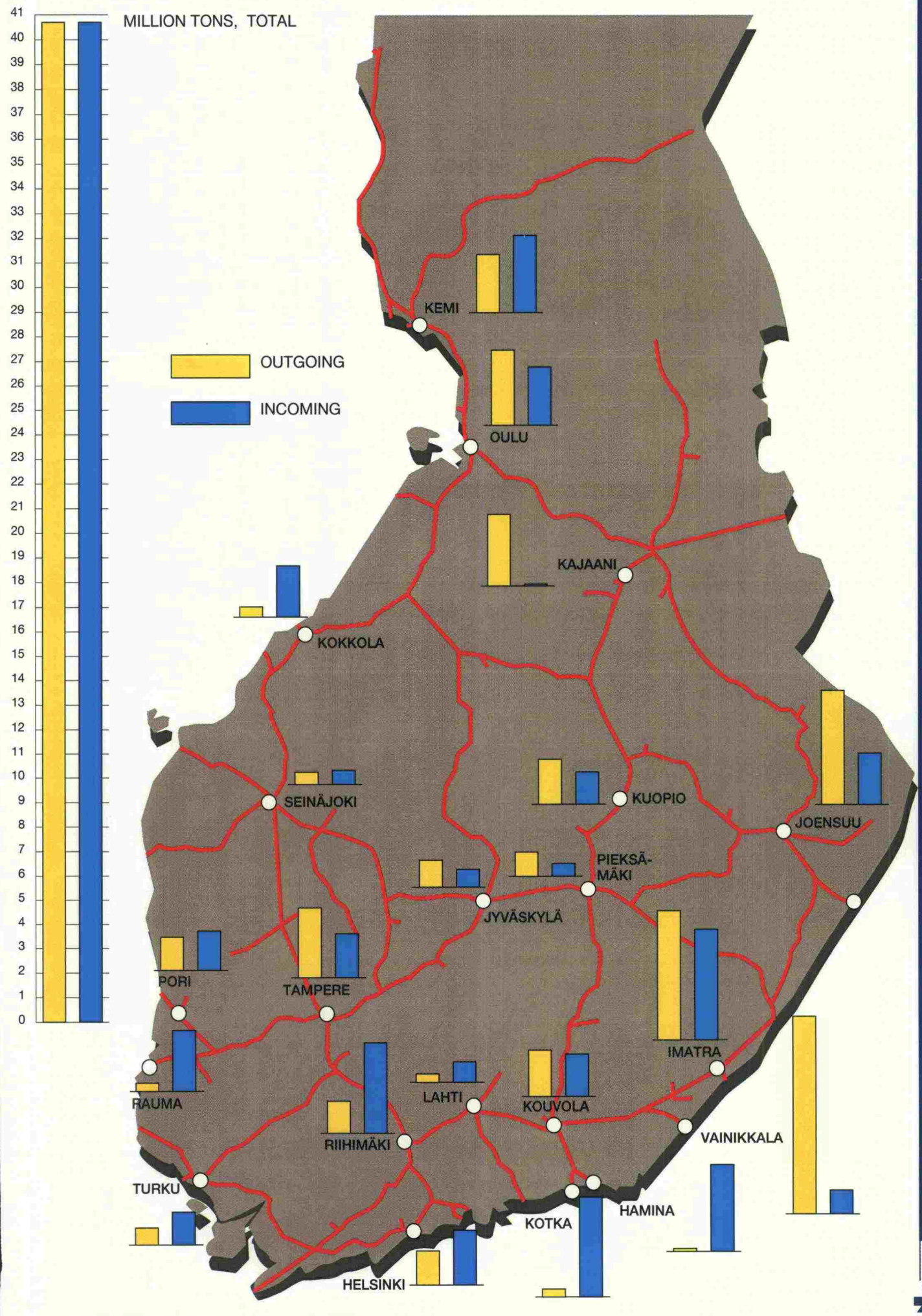
TON-KM IN WAGONLOAD TRAFFIC IN 1988 - 1998



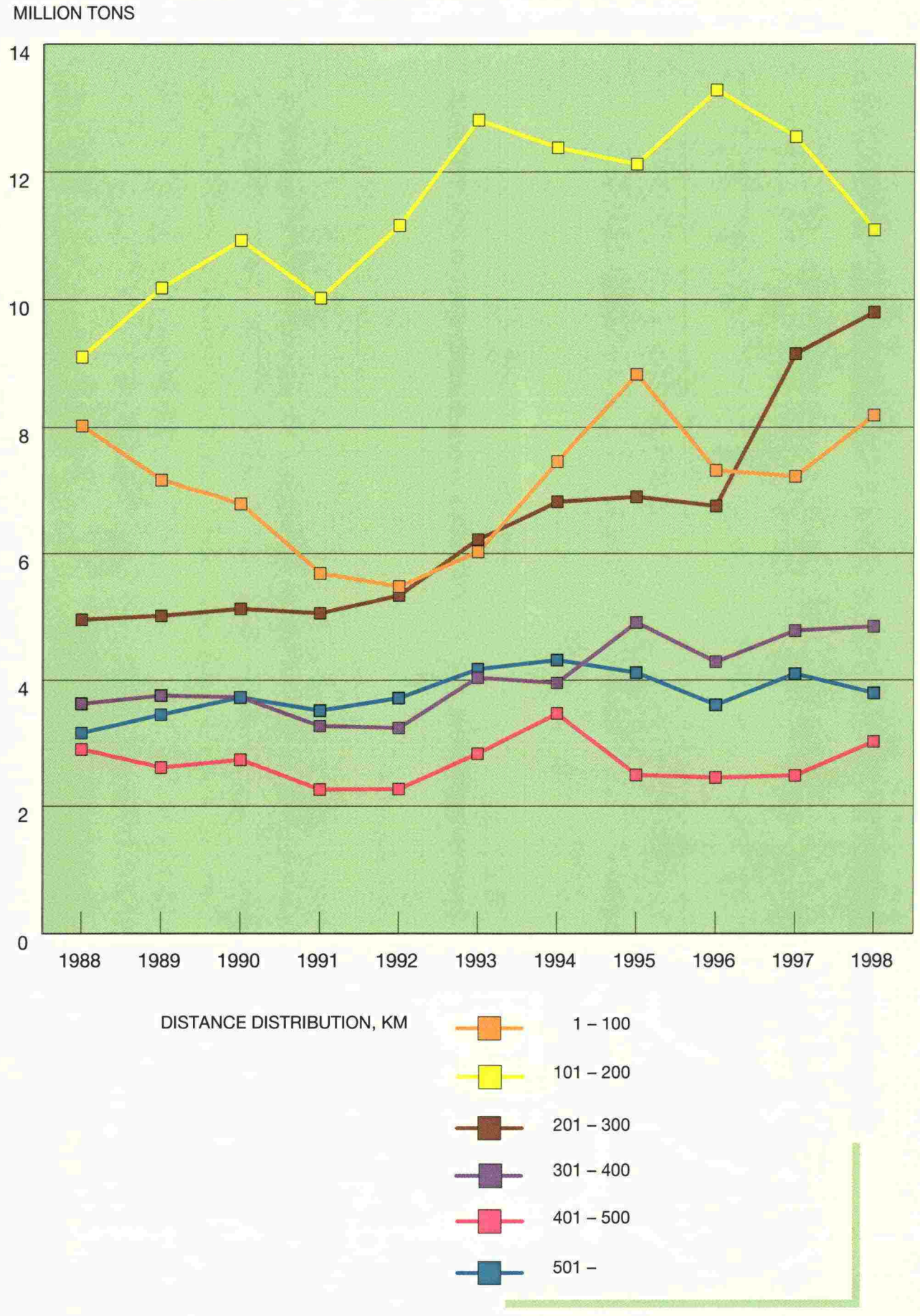
4.2 FREIGHT FLOWS IN 1998



4.3 FREIGHT CARRIED IN COMMERCIAL WAGONLOAD TRAFFIC IN 1998, BY DISTRICTS



4.4 WEIGHT OF FREIGHT CARRIED IN COMMERCIAL WAGONLOAD TRAFFIC IN 1988 - 1998, BY DISTANCE



4.5 TRAFFIC BETWEEN VR AND FOREIGN RAILWAYS IN 1998

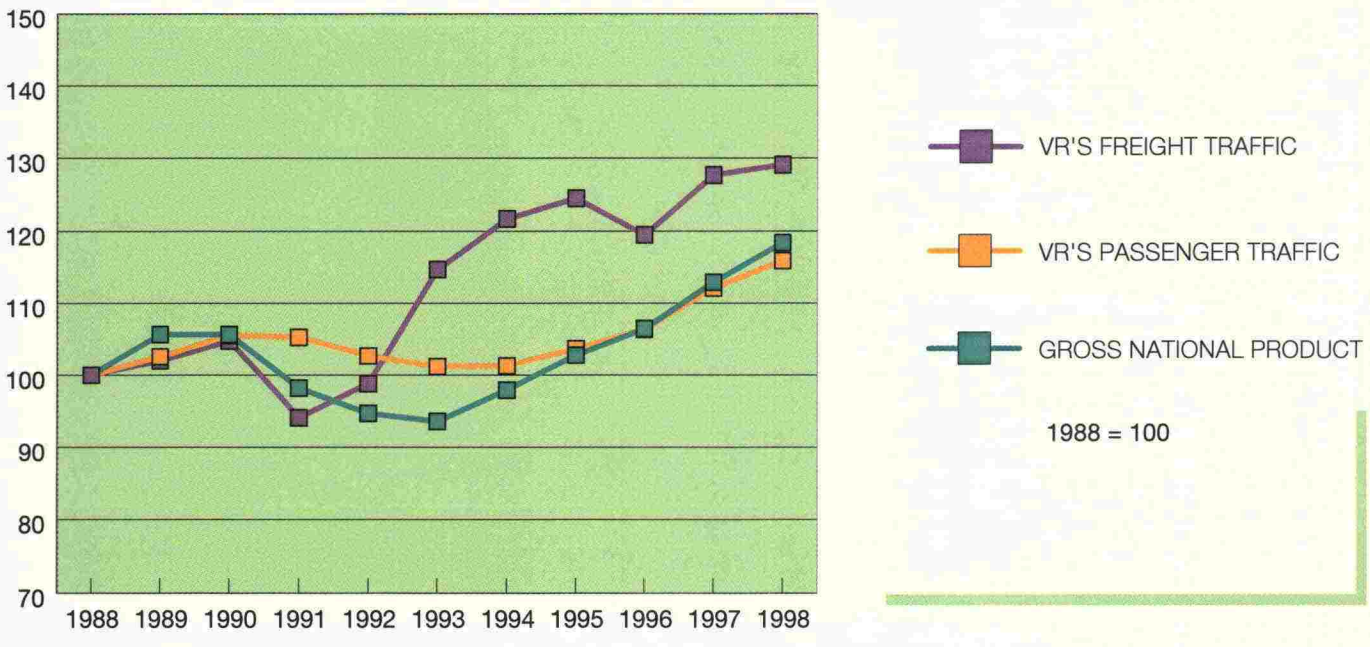
	Wagons									Passenger coaches		
	Finnish wagons			Foreign wagons			Total			Finnish	Foreign	Total
	Loaded	Empty	Total	Loaded	Empty	Total	Loaded	Empty	Grand total			
	Number of vehicles											
Despatched from Finland	**1 350**	**14 255**	**15 605**	**28 358**	**208 118**	**236 476**	**29 708**	**222 373**	**252 081**	**2 278**	**7 258**	**9 536**
Eastern traffic												
Vainikkala	–	10	10	22 375	106 744	129 119	22 375	106 754	129 129	2 278	7 172	9 450
Imatran-koski	–	1 871	1 871	679	48 977	49 656	679	50 848	51 527	–	81	81
Niirala	–	5 047	5 047	2 346	33 721	36 067	2 346	38 768	41 114	–	5	5
Vartius	–	7 327	7 327	460	18 026	18 486	460	25 353	25 813	–	–	–
Total	–	14 255	14 255	25 860	207 468	233 328	25 860	221 723	247 583	2 278	7 258	9 536
Western traffic												
Tornio	1 350	–	1 350	2 498	650	3 148	3 848	650	4 498	–	–	–
Arrived in Finland	**13 849**	**1 745**	**15 594**	**293 353**	**20 656**	**314 009**	**307 202**	**22 401**	**329 603**	**2 278**	**7 258**	**9 536**
Eastern traffic												
Vainikkala	–	7	7	156 534	17 439	173 973	156 534	17 446	173 980	2 278	7 172	9 450
Imatran-koski	1 599	254	1 853	64 338	1 375	65 713	65 937	1 629	67 566	–	81	81
Niirala	5 058	–	5 058	46 905	1 694	48 599	51 963	1 694	53 657	–	5	5
Vartius	6 684	642	7 326	23 576	148	23 724	30 260	790	31 050	–	–	–
Total	13 341	903	14 244	291 353	20 656	312 009	304 694	21 559	326 253	2 278	7 258	9 536
Western traffic												
Tornio Torneå	508	842	1 350	2 000	–	2 000	2 508	842	3 350	–	–	–
Number of vehicles carried in traffic between VR and foreign railways	**15 199**	**16 000**	**31 199**	**321 711**	**228 774**	**550 485**	**336 910**	**244 774**	**581 684**	**4 556**	**14 516**	**19 072**

5 VOLUME OF RAILWAY TRAFFIC

TRAFFIC VOLUME INDEX IN 1988 - 1998

1985 = 100	1994	1995	1996	1997	1998
Passenger traffic	104	106	109	115	116
Freight traffic	131	134	128	137	138
Total railway traffic	120	123	120	127	130

VOLUME INDEX

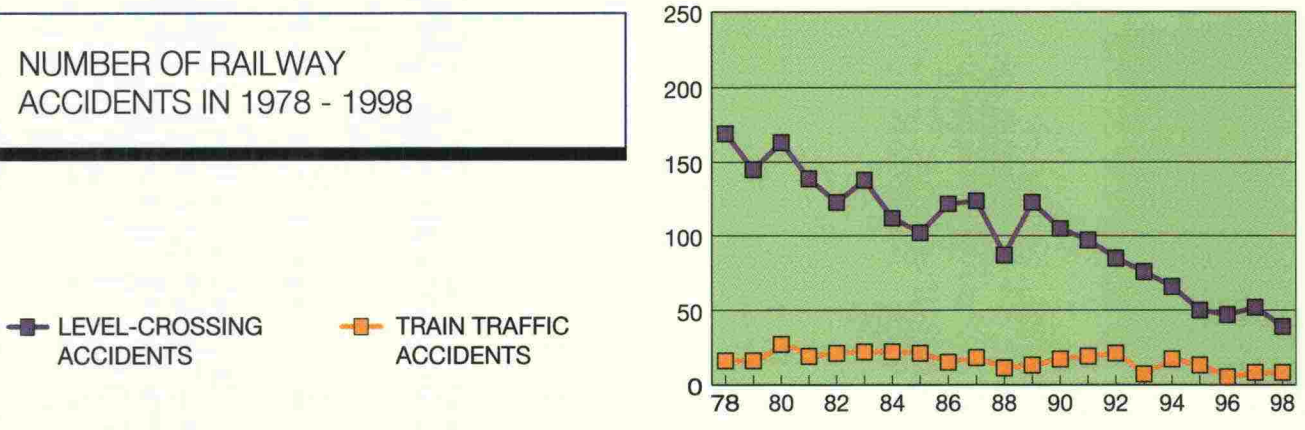


6 RAILWAY ACCIDENTS

6.1 RAILWAY ACCIDENTS IN 1998 [1]

Nature of accident	Number of accidents	Number of persons killed or seriously injured [2]		
	Total	Killed	Seriously injured	Total
Collisions	9	0	0	0
Train traffic	4	0	0	0
Shunting	5	0	0	0
Derailments	10	10	10	20
Train traffic	4	10	9	19
Shunting	6	0	1	1
Level-crossing accidents	39	11	2	13
With safety equipment	11	3	2	5
Without safety equipment	28	8	0	8
Fire in rolling stock in motion	13	0	0	0
Other accidents	4	3	2	5
Total	**75**	**24**	**14**	**38**
Accidents caused by road vehicles running into or through half-barriers	109	–	–	–

6.2 NUMBER OF RAILWAY ACCIDENTS IN 1978 - 1998



6.3 RATIOS RELATING TO RAILWAY ACCIDENTS IN 1994 - 1998

	1994	1995	1996	1997	1998
Total of persons killed or seriously injured Per one million train-km	0.99	0.78	0.52	0.84	0.85
Total of railway accidents Per one million train-km	2.93	2.17	2.09	2.24	1.69
Passengers					
Killed per one million journeys	0.07	0.02	0.06	0.02	0.19
Seriously injured per one million journeys	0.02	0.07	0.06	0.04	0.18

[1] Accidents caused by rolling stock in motion, resulting in deaths of persons or serious injuries or damage of more than 10 000 ECU (1 ECU = 5,979 FIM, December 1998).
[2] As defined by UIC (International Union of Railways).

7 HISTORICAL SURVEY

Year	Length of line on 31.12. [1]	Track length on 31.12. [1]	VR-owned rolling stock on 31.12.									Annual mean strength of VR's staff		VR's passenger traffic		VR's freight traffic	
			Tractive stock							Passenger stock	Freight stock						
			Steam locomotives	Diesel locomotives	Diesel railcars and railbuses	Electric railcars	Electric locomotives	Light rail motor tractors	Total			Full-time	Part-time	Number of journeys [2]	Passenger-kilometres [2]	Weight, 1000 tons [3]	Ton-kilometres [3]
	km													1 000			1 000
1862	108	..	6	–	–	–	–	–	6	13	142	..	..	39	..	13	..
1870	483	531	43	–	–	–	–	–	43	110	993	..	..	2 404	18 028	132	7 925
1880	852	1 005	98	–	–	–	–	–	98	231	2 176	1 594	..	1 813	65 870	506	49 480
1890	1 876	2 179	151	–	–	–	–	–	151	370	3 594	2 612	..	2 542	126 076	954	104 052
1900	2 650	3 304	310	–	–	–	–	–	310	755	8 547	[4] 10 282	..	6 899	337 173	2 463	343 370
1910	3 356	4 568	500	–	–	–	–	–	500	1 114	14 149	15 179	..	14 463	554 928	3 860	462 005
1920	3 987	5 567	539	–	–	–	–	–	539	958	13 016	24 105	..	17 549	775 488	5 439	931 679
1930	5 010	6 983	773	–	3	–	–	–	776	1 364	22 012	29 165	..	22 033	1 035 028	9 574	1 592 327
1935	5 367	7 497	740	1	13	–	–	–	754	1 428	23 348	28 845	..	20 052	947 038	12 334	1 979 598
1938	[5] 5 407	7 858	747	2	20	–	–	–	769	1 469	24 513	31 212	..	23 714	1 227 670	13 731	2 263 070
1945	4 668	6 715	741	4	22	–	–	–	767	1 471	23 261	38 547	..	61 344	3 202 595	[6] 11 489	[6] 2 459 817
1950	4 798	7 022	821	4	20	–	–	–	845	1 648	27 655	38 423	..	45 656	2 182 570	15 803	3 445 637
1955	4 889	7 453	798	18	80	–	–	..	896	1 617	26 169	36 073	..	39 444	2 260 463	19 158	4 482 223
1960	[7] 5 314	[7] 8 166	[7] 659	[7] 120	[7] 192	–	–	..	[7] 971	[7] 1 495	[7] 26 543	35 340	550	36 603	2 342 928	[8] 19 041	4 865 000
1965	5 458	9 560	514	306	261	–	–	184	1 265	1 380	26 887	34 903	558	31 171	2 049 624	20 556	5 182 900
1970	5 804	8 795	262	331	272	20	–	278	1 163	1 080	25 045	27 690	410	23 357	2 156 236	23 620	6 270 300
1971	5 873	8 909	262	351	270	31	–	268	1 182	1 055	24 805	26 878	368	24 870	2 348 560	22 399	[9] 5 756 300
1972	5 887	8 919	250	349	232	40	–	278	1 149	1 025	24 863	26 825	308	27 785	2 593 859	24 103	6 506 200
1973	5 897	8 923	250	349	232	50	4	273	1 158	1 042	24 471	26 870	273	29 635	2 773 244	26 515	7 010 900
1974	5 909	8 917	250	360	223	50	6	264	1 153	1 038	24 450	27 751	280	32 793	3 046 999	27 293	7 486 700
1975	5 918	8 938	250	369	223	60	27	259	1 188	1 055	24 862	29 002	277	35 546	3 135 164	22 657	6 438 200
1976	6 010	9 060	–	379	215	72	39	256	961	1 067	24 600	29 634	323	36 990	2 985 295	23 358	6 546 600
1977	6 063	9 131	–	384	215	80	51	259	989	1 076	24 496	29 333	306	36 762	2 977 155	22 079	6 398 800
1978	6 057	9 132	–	393	196	86	62	263	1 000	1 107	23 794	28 824	304	37 262	2 983 133	22 629	6 327 900
1979	6 078	9 149	–	395	189	90	74	260	1 008	1 093	23 825	28 761	303	37 618	3 019 988	26 657	7 367 500
1980	6 075	9 157	–	395	182	96	84	263	1 020	1 102	23 848	28 726	297	39 310	3 215 652	29 574	8 335 400
1981	6 068	9 142	–	379	164	100	91	254	988	1 171	23 542	28 705	276	41 016	3 274 126	29 848	8 390 700
1982	6 069	9 115	–	378	144	100	98	249	969	1 175	23 399	28 460	206	41 406	3 326 069	28 745	8 000 400
1983	6 069	9 116	–	383	128	100	103	246	960	1 155	23 109	27 852	192	41 546	3 338 647	29 270	8 091 200
1984	5 979	9 035	–	384	113	100	109	239	945	1 133	21 146	27 053	181	40 991	3 275 840	29 842	7 980 900
1985	5 877	8 931	–	384	104	100	110	238	936	1 109	17 796	26 310	165	40 419	3 223 988	30 781	8 067 100
1986	5 878	8 936	–	383	86	100	110	244	923	1 094	17 862	25 484	137	34 763	2 675 570	27 783	6 952 200
1987	5 863	8 921	–	382	60	100	110	234	886	1 035	16 798	24 695	111	45 759	3 061 600	30 108	7 403 400
1988	5 863	8 921	–	382	10	100	110	234	834	991	16 292	23 273	86	46 226	3 147 000	33 006	7 815 900
1989	5 863	8 933	–	364	8	100	110	240	822	994	15 663	21 761	65	45 536	3 207 900	33 639	7 958 400
1990	5 846	8 844	–	358	–	100	110	236	804	1 003	14 879	20 162	45	45 998	3 330 900	34 562	8 356 700
1991	5 853	8 676	–	368	–	100	110	232	810	1 016	13 724	19 569	–	45 795	3 230 100	31 065	7 634 200
1992	5 853	8 836	–	356	–	100	110	223	789	1 021	13 633	18 945	–	45 101	3 057 200	32 587	7 847 800
1993	5 864	8 991	–	350	–	100	111	227	788	1 005	13 675	18 277	–	44 362	3 006 500	37 869	9 259 100
1994	5 859	8 915	–	350	–	100	111	223	784	1 004	13 662	17 368	–	43 989	3 036 800	40 150	9 949 400
1995	5 859	8 977	–	346	–	100	111	217	774	994	13 718	[10] 15 228	–	44 420	3 184 400	[11] 39 387	[11] 9 292 900
1996	5 859	8 940	–	338	–	100	113	215	766	988	13 083	14 820	–	47 000	3 254 000	37 717	8 805 500
1997	5 865	8 730	–	334	–	102	124	215	775	995	12 495	14 346	–	49 980	3 376 000	40 321	9 856 400
1998	5 867	8 725	–	314	–	102	129	216	761	1 002	11 914	13 945	–	51 370	3 377 000	40 740	9 885 000

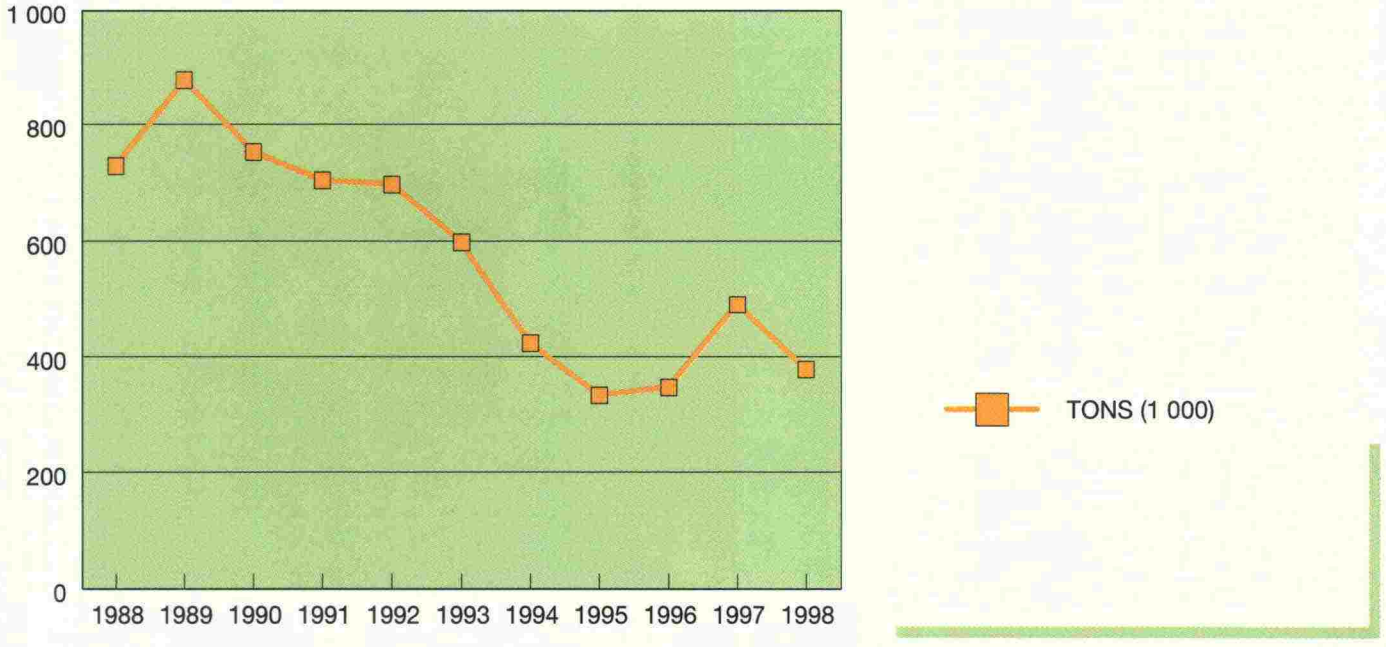
[1] Lines owned by the Finnish Rail Administration.
[2] Excluding free tickets and road traffic.
[3] Excluding parcels and transport of the railway's own freight. Live animals and means of transport included in the ton-kilometres only since 1921.
[4] Since 1900 including contractual staff.
[5] Since 1938 private sidings no longer included in the length of line.
[6] Since 1945 including express goods.
[7] Data on narrow-gauge lines not included.
[8] Since 1960 including local traffic proper.
[9] Since 1971 including local traffic proper.
[10] Since 1995 the staff of VR-Group Ltd, VR Ltd and VR-Track Ltd.
[11] Since 1995 train traffic only.

8 PRIVATE RAILWAYS

PRIVATE RAILWAYS AND THEIR ACTIVITY IN 1994 - 1998

Karhulan-Sunilan Rautatie Oy		1994	1995	1996	1997	1998
Opened for traffic on 3.5.1900						
Rail gauge	1.524 m					
Track length at end of year	km	11.1	11.1	11.1	11.1	11.1
Main tracks	km	6.1	6.1	6.1	6.1	6.1
Sidings	km	5.0	5.0	5.0	5.0	5.0
Length of line operated at end of year	km	6.1	6.1	6.1	6.1	6.1
Railway operating points at end of year		1	1	1	1	1
Rolling stock at end of year						
Motor locomotives		3	3	3	3	3
Staff at end of tyear		9	5	5	5	5
Number of trains						
Yearly		1 242	1 112	1 220	1 480	1 418
Daily		4.5	4.4	4.5	4.3	4.2
Train-km		7 452	6 672	7 320	8 880	8 508
Freight carried						
1 000 tons		423	333	347	490	378
1 000 ton-km		2 540	1 998	2 082	2 940	2 268

FREIGHT CARRIED IN 1988 - 1998



9 DATA ON VARIOUS COUNTRIES AND THEIR RAILWAYS IN 1997

Countries

		Finland	Sweden	Norway	Denmark	Spain	France	Austria	Germany
Population	million	5.1	8.9	4.4	5.3	39.3	58.6	8.1	82.0
Area	1 000 km²	338.1	450.0	323.9	43.1	504.8	547.0	83.9	357.0
Gross national product [1]		119	228	154	170	531	1 396	206	2 100

Railways

		VR, RHK	SJ, BV	NSB, JBV	DSB, BS	RENFE	SNCF,RFF	ÖBB	DB AG
Staff	1 000	14.4	19.5	10.7	15.6 [2]	36.4	175.1	55.1	233.3
Length of line operated	km	5 865	10 228	4 021	2 232	12 294	31 821	5 672	38 450
		VR	**SJ**	**NSB**	**DSB**	**RENFE**	**SNCF**	**ÖBB**	**DB AG**
Train traffic									
Train-km	million	44.1	100.9	37.0	59.1	165.0	507.2	127.6	838.0
Passenger traffic		27.1	65.8	27.3	51.8	124.9	346.4	86.2	646.1
Freight traffic		17.0	33.7	9.7	7.3	40.1	155.6	39.9	191.4
Passenger traffic									
Number of journeys	million	50.0	104.1	44.7	144.4	395.2	797.3	183.9	1 347.9
Passenger-km	million	3 376	6 286	2 561	4 988	16 579	61 573	8 140	59 432
Freight traffic [3]									
Volumes of transport	million ton	40.3	53.8	6.6	8.3	25.0	134.9	70.2	294.9
Ton-kilometer	million	9 856	18 127	2 399	1 619	10 956	53 855	13 922	72 389

[1] Mrd US $ (Source: OECD, Main Economic Indicators).
[2] Year 1996.
[3] Commercial traffic.

RHK & VR

RAPPORT ANNUEL A L'UNION INTERNATIONALE DES CHEMINS DE FER (UIC)

Col.			1998	1997
	TABLEAU 11 – LIGNES [1]			
	Trafic ferroviaire			
	Ecartement des rails: 1.524 m			
	Longueur des lignes à la fin de l'année			
	Lignes non électrifiées			
4	total	km	3 670	3 804
5	à simple voie	"	3 670	3 804
	Lignes électrifiées [2]			
13	total	"	2 197	2 061
14	à double voie et plus	"	507	507
15	Total (Col. 4 + 13)	"	5 867	5 865
	Lignes exploitées			
16	en trafic voyageurs seulement	"	–	–
17	en trafic marchandises seulement	"	1 889	1 888
	Transports routiers			
	Longueur exploitée des lignes à la fin de l'année			
19	à marchandises	km	–	–
	TABLEAU 21 – MATERIEL MOTEUR			
	Effectifs à la fin de l'année			
	Locomotives diesel			
5	Nombre total		512	521
6	dont supérieures à 1 500 kW		40	54
	Locomotives électriques			
7	Nombre total		129	124
8	dont supérieures à 3 000 kW		129	124
	Automotrices Diesel			
	Isolées			
9	Nombre total		–	–
	Rames indeformables			
10	Nombre		–	–
11	Nombre total des véhicules		–	–
	Automotrices électriques			
	Rames indeformables			
13	Nombre		102	102
14	Nombre total des véhicules		212	212
	Effectifs moyens annuels			
	Locomotives diesel			
17	total		517	528
18	immobilisées pour entretien et réparation		60	61
19	Locomotives électriques total		127	119
20	immobilisées pour entretien et réparation		12	13
	Automotrices diesel			
21	total		–	–
22	immobilisées pour entretien et réparation		–	–
	Automotrices électriques			
23	total		102	101
24	immobilisées pour entretien et réparation		12	12
	TABLEAU 22 – MATERIEL DE TRANSPORT DE VOYAGEURS			
	Effectifs à la fin de l'année			
	Véhicules des réseaux pour but commercial			
	Effectifs			
4	Voitures		756	747
5	Automotrices et remorques d'automotrices		212	212
6	Effectif total (Col. 4 + 5)		968	959
9	dont voitures climatisées		42	32
11	dont voitures-restaurants		63	63
12	dont voitures-couchettes		–	–
13	dont voitures-lits		122	122
	Nombre de places			
	Assises			
14	1ère classe		3 126	3 274
15	2ème classe		55 756	54 913
16	Couchettes, 2ème classe		–	–
17	Voitures-lits, 1ère + 2ème classe (nombre maximal)		4 141	4 141
18	Assises et couchées total (Col. 14 + 15 + 16 + 17)		63 023	62 328
	Fourgons			
19	Effectif total		35	35
	Effectifs moyens annuels			
	Voitures			
20	Effectif total		752	747
21	Immobilisées pour entretien et réparation		46	46
22	Automotrices et remorques d'automotrices			
	Effectif total		212	206
	TABLEAU 23 – MATERIEL DE TRANSPORT DE MARCHANDISES			
	Effectifs à la fin de l'année			
	Véhicules des réseaux			
	Wagons couverts			
4	Effectif		4 481	4 664
5	dont à bogies		682	629
6	Capacité totale en tonnes		141 313	143 531
	Wagons tombereaux			
7	Effectif		982	1 133
8	dont à bogies		874	908
9	Capacité totale en tonnes		50 380	54 625
	Wagons plats			
10	Effectif		6 491	6 736
11	dont à bogies		3 805	3 878
12	Capacité totale en tonnes		301 418	309 253
	Autres wagons			
13	Effectif		783	782
14	dont à bogies		781	780
15	Capacité totale en tonnes		44 193	44 112
	Total des wagons			
16	Effectif (Col. 4 + 7 + 10 +13)		12 737	13 320
17	dont à bogies (Col. 5 + 8 + 11 + 14)		6 142	6 195
18	Capacité totale en tonnes (Col. 6 + 9 + 12 + 15)		537 304	551 521
	Véhicules de particuliers			
	Wagons			
19	Effectif total		358	363
20	Capacité totale en tonnes		15 243	15 550
	Effectifs moyens annuels			
	Véhicules des reseaux et de particuliers			
	Wagons			
21	Total		12 353	13 038
22	Immobilisées pour entretien et réparation		132	173
25	Affectées exclusivement à des transports de service		2 246	2 210
	TABLEAU 31 – EFFECTIF MOYEN ANNUEL DU PERSONNEL			
	Administration générale			
3	Direction générale et Directions régionales		931	871
	Exploitation ferroviaire			
	Mouvement et trafic			
4	Services centraux et régionaux		484	484
5	Services des gares		2 085	2 275

[1] Propriétaire Administration de la Voie Ferrée Finlandaise.

[2] Lignes alimentées en courant alternatif 25 000 volts 50 périodes, sous caténaire.

Col.			1998	1997
6	Services des trains		2 291	2 328
7	Total (Col. 4 à 6)		4 860	5 087
	Matériel et traction			
8	Services centraux et régionaux		144	126
9	Service de conduite des véhicules moteurs		2 180	2 261
10	Ateliers principaux		993	1 425
11	Autre personnel		1 394	1 138
12	Total (Col. 8 à 11)		4 711	4 950
	Installation fixes			
13	Services centraux et régionaux		994	964
14	Entretien et surveillance des installations fixes		2 348	2 373
15	Total (Col. 13 + 14)		3 342	3 337
16	Total (Col. 3 + 7 + 12 + 15)		13 844	14 245
	Autres exploitations			
17	Services routiers		–	–
19	Diverses		101	101
20	**Travaux d'établissement. de reconstruction. etc** [3]		–	–
	Total du personnel du réseau			
21	Total du personnel (Col. 16 + 17 + 19 + 20)		13 945	14 346
22	dont statutaires		13 613	14 104
23	**Travailleurs fournis par des firmes**		..	..
	TABLEAU 41 – PARCOURS DES TRAINS			
	Locomotives Diesel			
7	Total (Col. 8 + 9)	1 000 km	13 858	14 399
8	Affectées au trafic voyageurs	"	5 870	5 911
9	Affectées au trafic marchandises [4]	"	7 988	8 488
	Locomotives électriques			
10	Total (Col. 11 + 12)	1 000 km	22 947	22 110
11	Affectées au trafic voyageurs	"	13 571	13 566
12	Affectées au trafic marchandises	"	9 376	8 544
	Automotrices Diesel			
13	Total (Col. 14 + 15)	1 000 km	–	–
14	Affectées au trafic voyageurs	"	–	–
15	Affectées au trafic marchandises	"	–	–
	Automotrices électriques			
16	Total	1 000 km	7 676	7 628
17	Affectées au trafic voyageurs	"	7 676	7 628
	Tous modes de traction			
19	Total (Col. 20 + 21)	1 000 km	44 481	44 137
20	Affectées au trafic voyageurs (Col. 8 + 11 + 14 + 17)	"	27 117	27 105
21	Affectées au trafic marchandises (Col. 9 + 12 + 15)	"	17 364	17 032
	TABLEAU 42 – TONNAGE KILOMETRIQUE BRUT REMORQUE DES TRAINS			
	Locomotives Diesel			
7	Total (Col. 8 + 9)	1 000 000 km	10 414	11 036
8	Affectées au trafic voyageurs	"	1 539	1 560
9	Affectées au trafic marchandises	"	8 875	9 476
	Locomotives électriques			
10	Total (Col. 11 + 12)	1 000 000 km	17 750	17 135
11	Affectées au trafic voyageurs	"	5 594	5 663
12	Affectées au trafic marchandises	"	12 156	11 471
	Automotrices Diesel			
13	Total (Col. 14 + 15)	1 000 000 km	–	–
14	Affectées au trafic voyageurs	"	–	–
15	Affectées au trafic marchandises	"	–	–
	Automotrices électriques			
16	Total	1 000 000 km	837	834
17	Affectées au trafic voyageurs	"	837	834
	Tous modes de traction			
19	Total (Col. 20 + 21)	1 000 000 km	29 001	29 004
20	Affectées au trafic voyageurs (Col. 8 + 11 + 14 + 17)	"	7 970	8 057
21	Affectées au trafic marchandises (Col. 9 + 12 + 15)	"	21 031	20 947
	TABLEAU 43 – PARCOURS DU MATERIEL ROULANT [5]			
	Parcours des véhicules moteurs par mode de traction			
5	Locomotives diesel	1 000 km	26 525	27 235
6	Locomotives électriques	"	26 709	25 610
7	Automotrices diesel	"	–	–
8	Automotrices électriques	"	10 732	10 497
9	Tous modes de traction (Col. 5 à 8)	"	63 966	63 342
10	**Voitures automotrices et remorques d'automotrices** (en essieu-kilomètres de wagon)		165 025	164 825
	Wagons (en essieu-kilomètres de wagon)			
11	Total	1 000 km	504 289	510 463
12	dont chargés	"	277 369	282 659
13	Fourgons [6]	"	7 900	7 850
	TABLEAU 51 – TRAFIC COMMERCIAL VOYAGEURS [7]			
	Trafic ferroviaire			
	Nombre de voyageurs			
3	total	1 000	51 370	49 980
4	en 2ème classe	"	..	..
	Nombre de voyageurs-kilomètres			
5	total	1 000 000 km	3 377	3 376
6	en 2ème classe	"	..	..
7	Parcours moyen d'un voyageur (Col. 5 x 1 000: Col. 3)	km	65.7	67.5
	Bagages			
	Automobiles accompagnées			
8	Nombre		33 383	32 058
9	Poids (en tonnes)		50 074	48 086
	Autres			
10	Poids (en tonnes)		1 680	..
	TABLEAU 61 – TRAFIC MARCHANDISES			
	Trafic ferroviaire			
	Tonnes transportées (en milliers)			
	Transport commercieaux			
	Par categorie de trafic			
3	Colis express et envois de détail		–	–
4	Wagons complets		40 740	40 321
5	Dont par trains complets		..	..
6	Wagon de Particuliers vides		–	–
7	Total (Col. 3 + 4 + 6)		40 740	40 321
8	Transports en service		78	79
9	Total général (Col. 7 + 8)		40 818	40 400
	Tonnes-kilomètres			
	Transports commerciaux			
	Par catégorie de trafic			
10	Colis express	1 000 000 km	–	–
11	Wagons complets	"	9 885	9 856
12	Dont par trains complets	"	..	..
13	Wagons de particuliers vides	"	–	–
14	Total (Col. 10 + 11 + 13)	"	9 885	9 856
15	Transports en service	"	24	20

[3] Personnel compris dans la colonne 16.

[4] Y compris les parcours des transports de service.

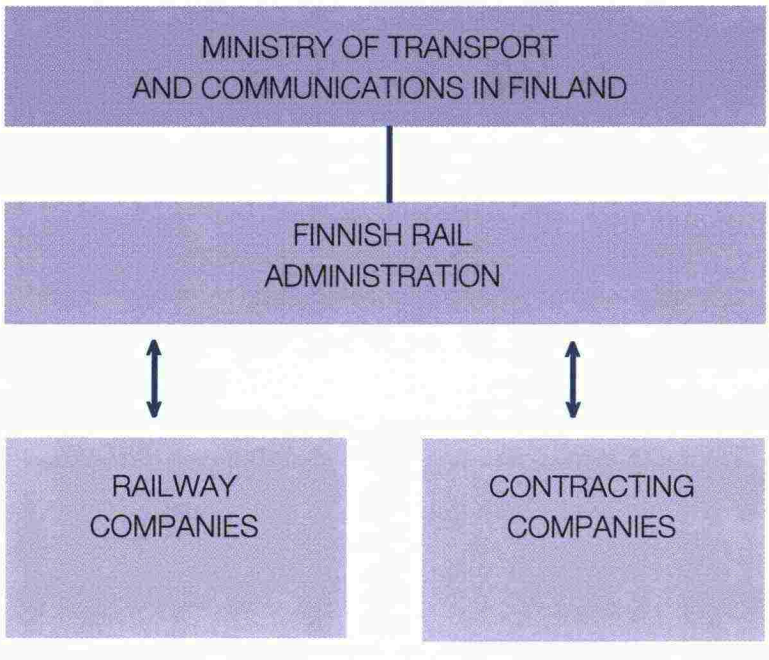
[5] Total des parcours sur le Réseau, y compris les véhicules étrangers.

[6] Non compris les wagons pour transport d'autos du trafic "Autos accompagnées".

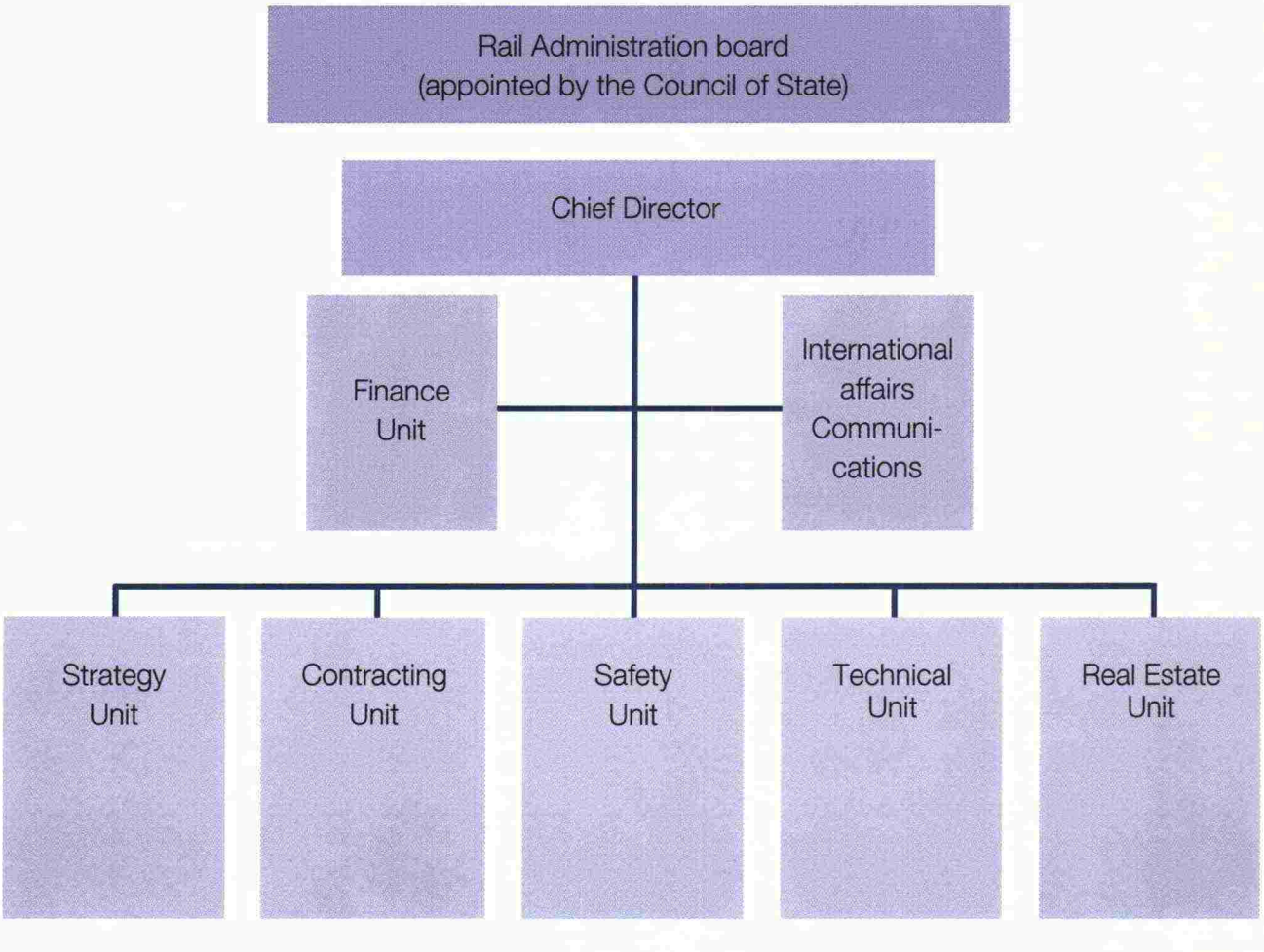
[7] Voyageurs payants seulement, quel que soit le taux de redaction appliqué.

Col.		1998	1997
16	Total général (Col. 14 +15) "	9 909	9 876
	Parcours moyen d'une tonne		
	Transports commerciaux		
17	(Col. 10 + 11) x 1 000: (Col. 3 + 4) km	242.6	244.4
	dont transports intermodaux à charge et à vide	..	..
18	Nombre d'unités intermodales transportées (en milliers)	..	..

ROLE OF THE FINNISH RAIL ADMINISTRATION



ORGANISATION OF THE FINNISH RAIL ADMINISTRATION



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